The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

Paper No. 37

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

SHU-HUI CHEN and VITTORIO FARINA
Junior Party[1]

v.

HERVÉ BOUCHARD, JEAN-DOMINIQUE BOURZAT and ALAIN COMMERCON
Senior Party[2]

Patent Interference No. 103,675

FINAL DECISION

Before Metz, Hanlon and Lorin, Administrative Patent Judges.

Metz, Administrative Patent Judge.

The subject matter contested in this interference is directed to a particular group of compounds said to be useful for the

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[1] Application 08/029,891, filed March 11, 1993, now U.S. Patent Number 5,254,580, issued on October 19, 1993. Assigned to Bristol-Myers Squibb Company, New York, New York.

[2] Application Serial Number 08/162,984, filed on December 8, 1993. Accorded benefit of France 92 14813, filed on December 9, 1992. Assigned to Rhone-Poulene Rorer S.A.

treatment of cancer in humans and to compounds which are useful intermediates for preparing the aforementioned group of compounds. The compounds are believed to function by promoting the assembly of stable microtubules from tubulin. Tubulin is the major constituent of microtubules which are hollow cylinders that serve as part of the skeletal system for cells and are crucial to a number of vital functions, including mitosis. When the compounds bind to tubulin, the microtubules are stabilized against depolymerization and, thus, inhibit mitosis. The compounds are derivatives of taxol[3], a well-known compound useful in the treatment of ovarian and breast cancer.

BACKGROUND

This interference was declared on October 24, 1995, and was captioned Chen et al. v. Bouchard et al. based on the parties' respective effective filing dates. On February 18, 1999, the interference was redeclared by the Administrative Patent Judge (APJ) to add a third party, Hester et al. (Application Serial Number 08/454,210, filed on June 9, 1995) as a second junior party (see Paper Number 158). On July 9, 1999, the APJ redeclared the interference to reflect her decision authorizing Hester et al. to

[3] Taxol is the trademark for a proprietary product of the Bristol-Myers-Squibb Company and is synthetically prepared paclitaxel. Paclitaxel is naturally obtained from the bark of the Pacific yew tree.

add claims to their involved application to be designated as corresponding to Count 2 and Count 3A (see paper Number 180). On October 29, 1999, the APJ redeclared the interference to reflect her decision granting the parties' joint motion to substitute Count 4 for Count 1, which was deleted (see Paper Number 193). Finally, on February 1, 2000, the APJ redeclared the interference to reflect her decision removing Hester et al. from the proceeding and declaring two separate interferences denominated as Chen et al. v. Hester et al. (Interference 104,490) and Hester et al. v. Bouchard et al. (Interference Number 104,491). In her order redeclaring Interference Number 103,675 as a two-party proceeding in which Chen et al. were the junior party, the APJ set forth a copy of the three counts in the interference as Counts 2, 3A and 4 (see Paper Number 229).

As noted above, the specific interfering subject matter contested by the parties in this proceeding is defined by three counts in this interference: Count 2; Count 3A and Count 4. A copy of the counts is reproduced below for a more facile understanding of the contested subject matter in this interference.

COUNT 2

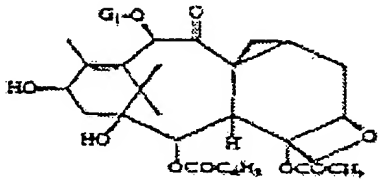
4α-10β-diacetoxy-2α-benzoyloxy-5β,20-epoxy-1β-hydroxy-7β,8β-methylene-9-oxo-19-nor-11-taxen-13α-yl(2R,3S)-3-tert-butoxycarbonylamino-2-hydroxy-3-phenylpropionate

OR

N-debenzoyl-N-t-butoxycarbonyl-7-deoxy-8-desmethyl-7,8-cyclopropataxol.

COUNT 3A

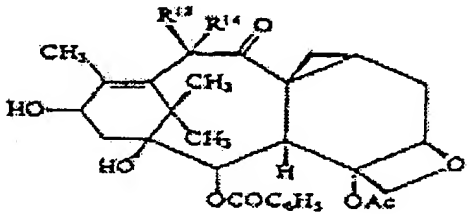
A taxoid of the formula:



in which G_1 represents hydrogen or acetyl,

OR

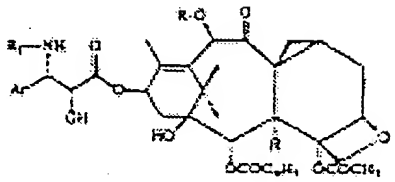
A compound of the formula:



in which R^{13} is hydrogen, acetyloxy or hydroxy; R^{14} is hydrogen; or R^{13} and R^{14} jointly form a carbonyl group.

COUNT 4

A taxoid of the formula:



in which

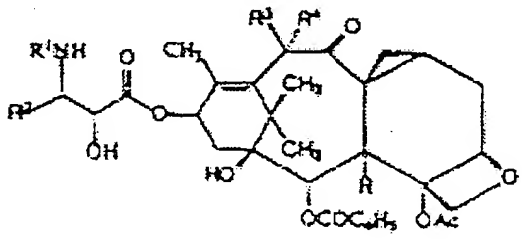
R represents hydrogen or acetyl,

R_1 represents benzoyl or R_2-O-CO- in which R_2 represents t—butyl, and

Ar represents phenyl or α- or β-naphthyl, said phenyl or naphthyl being unsubstituted or substituted by C_{1-4} alkyl, C_{1-4} alkoxy, halogen, or CF_3, or Ar represents 2- or 3-thienyl or 2- or 3-furyl, said thienyl or furyl being unsubstituted or substituted by halogen,

OR

A compound of the formula



in which

R^1 is $-COR^2$ in which R^2 is t-butyloxy, C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{3-6} cycloalkyl or phenyl, optionally substituted with one to three same or different C_{1-6} alkyl, C_{1-6} alkoxy, halogen or $-CF_3$ groups;

R^2 is C_{1-6} alkyl, C_{1-6} alkenyl, C_{2-6} alkynyl, C_{3-6} cycloalkyl, or a radical of the formula $-W-R^x$ in which W is a bond, C_{2-6} alkenediyl, or $-(CH_2)_t-$, in which t is one to six; and R^x is naphthyl, furyl, thienyl or phenyl, and furthermore R^x can be optionally substituted with one to three same or different C_{1-6} alkyl, C_{1-6} alkoxy, halogen or $-CF_3$ groups; and

R^3 is OCOR, -OCOOR, H, or OH; R^4 is hydrogen; or R^3 and R^4 jointly form a carbonyl group; and R is C_{1-6} alkyl.

The claims of the parties which correspond to the counts in this interference are[4]:

COUNT 2

Chen et al.: Claims 7 through 9

Bouchard et al.: Claim 142

[4] See Paper Number 228; "Redeclaration"; mailed on February 1, 2000.

COUNT 3A

Chen et al.: Claims 10 and 11

Bouchard et al.:Claim 141

COUNT 4

Chen et al.: Claims 1 through 6, 8 and 9

Bouchard et al.: Claim 140

The parties were provided an opportunity to file separate briefs in this proceeding, one addressing the issues raised by the various motions, including the motions specifically deferred to final hearing by the APJ, and one brief addressing the parties' respective cases for priority. Both parties have filed separate briefs addressing the issues raised in the motions. Chen et al., the junior party and, thus, the party bearing the burden of proof on the issue of priority filed a priority brief and Bouchard et al. filed a brief in opposition to Chen et al.'s priority brief. Bouchard et al.'s priority brief is little more than a statement by them that they rely on the filing date of their earlier filed French application for which they have been accorded benefit.

Chen et al.'s motions brief is directed to their motions for benefit under 37 C.F.R. § 1.633(f) which were deferred to final hearing by the APJ in her decision of August 22, 1996 (Paper Number 53). Bouchard et al.'s motions brief is directed to certain interlocutory decisions rendered by the APJ; a request under 37

C.F.R. §1.655(c); and, a motion to strike certain evidence proffered by Chen et al. with a reply to certain Bouchard et al. oppositions to preliminary motions.

Because the Chen et al. motion for benefit, if granted, would make Chen et al. the senior party and Bouchard et al. the junior party and would place the burden of proof on priority to Bouchard et al., we shall first decide the deferred motions for benefit based on the arguments and evidence proffered by the parties in their respective briefs. Although there are two motions for benefit, the applications for which benefit is sought have the identical disclosures. Therefore, in our decision which follows, we shall decide both motions based on Chen et al.'s first filed application for which benefit is sought.

THE TESTIMONY

We feel compelled to comment on the testimony as it has been presented in the parties' respective records and referenced in their briefs. In any future proceedings, the parties should always keep in the mind that it is the testimony of the **WITNESSES** which is of importance and relevant to the trier of fact, not the colloquy between the respective legal counsel. The interference rules (37 C.F.R. § 1.675(c)) require that after an objection is made the testimony be given subject to the objection. The practice adopted in the interference rule parallels the practice in Rule 30 of the Federal Rules of Civil Procedure (FRCP) and, except for Rules 103 and 615, Rule 30 incorporates the Federal Rules of Evidence. The

Federal Rules of Evidence (FRE) apply in interference proceedings (37 C.F.R. § 1.671(b)). The federal rules are also clear on the matter of objections: make the objection for the record and allow the witness to answer the question. This the parties have failed to do throughout virtually all the depositions, and the parties failure to follow the rules has made our task here more difficult.

THE MOTIONS BRIEFS

37 C.F.R. §1.656

Before we begin our analysis of the parties' respective positions, we note that the requirements for the parties' briefs are set forth in 37 C.F.R. §§ 1.656(b)(1) through 1.656(b)(8). 37 C.F.R. § 1.656(b)(6) specifically requires the brief to contain an argument which:

> shall contain the contentions of the party with respect to the issues it is raising for consideration at final hearing, and the reasons therefor, with citations to the cases, statutes, or other authorities, and parts of the record relied on. [Emphasis added.]

Mere presentation of facts, evidence and conclusions without specific citations to the legal theory on which a party relies and the cases, statutes or other authorities which support a party's position on an issue do not aid us in our resolution of the issues.

We have, of course, reviewed the entire record in this interference, including all of the declaration testimony and exhibits submitted by the parties. Nonetheless, we shall not relieve the parties of their burden under the rules and speculate as to what is the basis for the conclusions of fact and law made by

them in their briefs where no adequate reference to the record or citation of authority is proffered by them. Neither will we search through the record to find facts which might support the positions taken by them in their briefs. Rather, conclusions of fact and law made without appropriate citation to the record or citation of authority will be taken as mere attorney argument. Compare Ex parte McCullough, 7 USPQ2d 1889 (BPAI 1988); Ex parte Myer, 6 USPQ2d 1966 (BPAI 1988): In re Mehta, 347 F.2d 859, 146 USPQ 284 (CCPA 1965).

Broad references such as "(See, Statement of Facts, infra, ¶¶ 21-42)." found at page 35 of Chen et al.'s motions brief lack the adequate specificity required by the rule to direct us to a particular fact or set of facts which support a particular argument or satisfy a requirement of law. Rather, such broad references to the record are considered to be invitations to the Board to search through the party's evidence and find facts which support a party's position on a particular issue. The reference at page 35 of Chen et al.'s brief would have us read each paragraph of the "facts", analyze each paragraph and then have us make a determination of which alleged fact supports which specific argument or legal theory. This we will not do because it is the burden of the proponent of a particular position to do so.

The utter lack of factual detail alone in the "argument" section of Chen et al.'s motions brief which would support the arguments made therein concerning the existence of an alleged embodiment within any of the three counts in this proceeding

mandates that we deny Chen et al. the relief requested. We reiterate that it is not adequate to invoke the numbered statements of facts required by the rule by broad, all encompassing reference thereto. Rather the rule requires "citations to the cases, statutes, other authorities, and parts of the record relied on." This Chen et al. have failed to do in their motions brief.

Further, the counts in this interference are defined by various structural formulae which include thereon various substituents defined variously as R, R_1, Ar, R^1, R^2, R^3, R^4, G_1, R^{13} or R^{14}. Significantly, Chen et al.'s brief fails to show a correspondence between the examples from the earlier filed applications which they seek to establish as embodiments within each of the counts and the express limitations of each of the counts. Nevertheless, in an abundance of caution, we shall undertake to decide Chen et al.'s motions based on the merits of Chen et al.'s arguments to the extent they are supported by adequate facts in the record.

THE MOTION FOR BENEFIT

A party moving for relief under 37 C.F.R. § 1.633 has the burden of establishing it is entitled to the relief requested. Kubota v. Shibuya, 999 F.2d 517, 520-21, 27 USPQ2d 1418, 1422 (Fed. Cir. 1993); 37 C.F.R. §1.637, first sentence. Although this interference involves the junior party's issued patent, because the involved patent issued from an application filed before the senior party's U.S. application was filed but after the senior party's

effective fling date of December 9, 1992, the junior party's involved patent was copending with the senior party's involved application and, therefore, the burden of proof is by a preponderance of the evidence. See Bruning v. Hirose, 161 F.3d 681, 686, 48 USPQ2d 1934, 1938 (Fed. Cir. 1998). A preponderance of the evidence has been defined as a standard which only requires the fact finder :

> to believe that the existence of a fact is more probable than its nonexistence before [he] may find in favor of the party who has the burden to persuade the [judge] of the fact's existence.

Boises v. Benedict, 27 F.3d 539, 541-42, 30 USPQ2d 1862, 1864 (Fed. Cir. 1994), quoting from In re Winship, 397 U.S. 358, 371-72 (1970).

Contrary to Chen et al.'s statement at page 29 of their motions brief regarding 35 U.S.C. § 120, benefit in an interference is with respect to the counts not claims. Benefit with respect to 35 U.S.C. § 120 requires satisfaction of the statute with respect to the full scope of the claims rather than a single embodiment within a count. Thus, benefit for an earlier filed application with respect to a count in interference where the count is to a genus of compounds or embraces multiple compounds is established by showing at least one embodiment (species) within the count in the earlier filed application and which disclosed embodiment satisfies the requirements of the first paragraph of 35 U.S.C. § 112. Hunt v. Treppschuh, 532 F.2d 1386, 1389, 187 USPQ 426, 429 (CCPA 1975);

Den Beste v. Martin, 252 F.2d 302, 304-05, 116 USPQ 584, 586 (CCPA 1958); Mori v. Costain, 214 USPQ 295, 297 (BPAI 1982). Accordingly, for Chen et al.'s motions to be granted with respect to each count, Chen must show by a preponderance of the evidence, an embodiment within each of the counts which satisfies the statute for each of their earlier filed applications for which Chen et al. claim benefit. See also 37 C.F.R. § 1.637(f)(3).

On July 1, 1992, Chen filed application Serial Number 07/907,261. On January 19, 1993, Chen re-filed a continuation of said application as Serial Number 08/006,423. The involved Chen patent in this interference was filed as a continuation-in-part of said continuation application on March 11, 1993, as Serial Number 08/029,819. After Chen's first filed application was filed but before Chen's continuation application was filed, Bouchard filed their French application on December 9, 1992. Bouchard has been accorded benefit of the filing date for their French application in this proceeding.

CHEN APPLICATION SERIAL NUMBER 07/907,261

The first filed Chen et al. application for which Chen et al. seek benefit for the subject matter of the count was filed on July 1, 1992 and is entitled "FLUORO TAXOLS." On page 3 of the application, after acknowledging that the introduction of fluorine into pharmacologically active compounds has led to "the discovery of some profound and unexpected results", Chen et al. state:

It is the intention of the present invention to provide

fluorinated taxols and their derivatives.

Under the heading "SUMMARY OF INVENTION", Chen et al. disclose a compound of the formula I and describe it as a "fluorinated taxol derivative." The compound depicted by formula I is a 7-fluoro taxol derivative. According to Chen et al.'s disclosure, different isomeric ratios of the 7-fluoro derivative may be obtained depending on reaction conditions. For example, the choice of solvent was found to influence the ratio of α- and ß-isomers produced, ethereal solvents favoring α-isomers compared to halogenated solvents (see page 5, lines 17 through 32). Chen et al. disclose various reaction schemes for the synthesis of the 7-fluoro taxol derivatives (see page 5, line 17 through the end of page 14), and there are 9 (nine) examples of compounds prepared according to Chen et al.'s disclosure (see page 18 through page 32, line 32).

In Example 2, a 1:1 mixture of 7-α- and 7-ß-isomers of a 7-fluoro taxol derivative according to formula I were prepared from the compound of Example 1. In Example 3, the compound prepared in Example 2 was used to prepare a mixture of α- and ß-isomers of a 7-fluoro taxol derivative with the 2'-hydroxy protecting group removed. In Example 4, the compound prepared in Example 1 was used to prepare an hydroxy protected 7-α-fluorotaxol derivative which was subsequently deprotected as in Example 3. In Example 5, a mixture of 7-fluoro taxol isomers was used to prepare a 7-fluoro baccatin derivative (see compound IV on page 11 of the specification). The intermediate was used to prepare a protected 7-

fluoro taxol derivative of the formula V (see page 11) and denominated as compound **Va'**. In Example 6, the compound prepared in Example 5 had the triethyl silyl protecting group on the 2'-position removed to prepare a compound denominated as **Ib'**. In Example 7, a compound denominated as compound **XVa** was prepared according to a fifth reaction scheme as set forth in Example 7. In Example 8, a compound named 7α-fluoro-10-desoxytaxol and denominated as compound **Ic''** was prepared from 10-desacetyltaxol and hydroxy protecting agents to obtain a mixture of 2'- and 7-hydroxy protected and 2'- and 10-hydroxy protected taxol derivatives which were then further reacted according to reaction scheme III (see page 8, lines 3 through 30 and pages 12 and 13) to obtain the final product, 7-α-fluoro-10-desoxytaxol. In example 9, a compound named as 7-α-fluoro-desacetyltaxol and denominated as compound **Id''** was prepared from 10-desacetyltaxol and diethylaminosulfur trifluoride (DAST) using synthesis scheme IV (see page 8, line 31 through page 9, line 2 and page 14).

The compound of Example 1 is described as a "white powder" with a particular melting point, refractive index, characteristic NMR spectra as identified by: chemical shifts compared to a tetramethylsilane (TMS) standard; the relative area for the shifts corresponding to the number of hydrogen atoms of a particular type in the compound; and, a definition of the nature of the shifts as to multiplicity; mass spectrum analysis; and, an empirical formula.

The compound obtained in Example 2 is defined as "white

amorphous solid" and being a 1:1 mixture of α- and ß-isomers of the named compound. Also included are characteristic NMR spectra as identified by chemical shifts compared to deuterated chloroform as an internal standard.

The compound prepared in Example 3 is described as a "white solid". There are also included the NMR characteristics defined by the chemical shifts for the compound compared to deuterated chloroform as an internal standard. According to the description of how the compound of Example 3 was synthesized, the α- and ß-isomers were separated by high pressure liquid chromatography (HPLC).

Intermediate compound **IIIa** prepared according to Example 4 is described as an "amorphous solid." According to the description of the synthesis in the example, the NMR spectra for compound **IIIa** was "essentially identical to that reported in Example 2." Upon deprotection of the 2'-position in compound **IIIa** 7-α-fluorotaxol was obtained. Although no NMR data are set forth in the example, the NMR spectra was said to be "consistent for the structure." The calculated molecular weight (856.3344) for the sample was substantially the same as the molecular weight as determined by mass spectrum (856.3367).

In Example 5, the named product obtained is described as a "white foam." Additionally, NMR characteristics as defined by chemical shifts for the compound compared to deuterated chloroform as an internal standard are set forth.

In Example 6, the named product is described as a "foam" and

the NMR characteristics for the compound as defined by the chemical shifts for the compound compared to deuterated chloroform as an internal standard are set forth. Additionally, the calculated molecular weight and the actual molecular weight obtained by mass spectrum are set forth.

In Example 7, the named product is described as a "white solid" having characteristic NMR shifts compared to deuterated chloroform as an internal standard.

In Example 8, the named compound is described as a "foam", having characteristic NMR shifts compared to deuterated chloroform as an internal standard. The actual molecular weight as determined by high resolution mass spectrometry (HRMS) compared to calculated molecular weight is also set forth.

In Example 9, the named compound is described as a "white solid" having characteristic NMR shifts compared to deuterated chloroform as an internal standard. The actual molecular weight as determined by HRMS compared to the calculated molecular weight is also set forth.

The efficacy of certain compounds prepared in the foregoing examples was tested for *in vitro* cytotoxicity and for tumor inhibition in Balb/c mice (see pages 33 through page 35, line 18). Specifically, the compounds prepared in Examples 3, 4, 6, 8 and 9 were tested *in vitro* and compared with the efficacy of taxol for cytotoxicity against human colon carcinoma cells. Additionally,

Balb/C mice were implanted with lung carcinoma and then injected with either the compound of Example 3 or Example 6 and the median survival time for said mice was compared to the median survival time for control mice. Both tests showed the compounds prepared in the Examples possessed tumor inhibiting activity.

The application concluded with claims to the genus of compounds having the formula I. Additionally, Chen et al. claimed: various species within the broad genus of compounds; fluoro baccatins III of the formula IV; pharmaceuticals comprising a compound from the genus of compounds having the formula I and associated with one or more carriers, excipients or diluents; and, a method for treating mammalian tumors comprising administering to a mammal a tumor sensitive amount of a compound within the genus of compounds defined by formula I.

On August 2, 1992, the examiner issued a Notice of Allowability of claims 1 through 18 and attached a Notice of References Cited form (PTO-892) (Paper Number 2). On August 13, 1992, Chen et al. filed an Information Disclosure Statement (IDS), which IDS was acknowledged by the examiner on October 8, 1992. On November 12, 1992, Chen et al. authorized the issue fee to be paid and on November 18, 1992, the issue fee was charged against Chen et al.'s assignee's Deposit Account Number 02.3850.

On February 22, 1993, Chen et al. re-submitted their Petition to Withdraw From Issue under 37 C.F.R. §1.313(b)(5) which was first submitted on January 19, 1993. In their petition, Chen et al.

alleged that:

> through continuing effort toward making better taxol derivatives, Applicants have recently discovered that some of the compounds claimed in the application had the incorrect structures.

According to their petition, applicants discovered that:

> recent investigation has revealed that what was once believed to be the ß-fluorotaxol derivatives were actually cyclopropyl derivatives of the formula **XXXV**. [formula omitted]

Applicants expressed their desire to "correct their mistake and claim the proper entities."

In a decision mailed on February 22, 1993, applicants' petition to withdraw the application from issue was granted and applicants' expressed intention to abandon their application was recognized. On the same date, a paper from the Office of the Assistant Commissioner for Patents to the Director of the Office of Publication and Dissemination was mailed to applicants indicating that: the application was to be withdrawn from issue; the issue fee was not to be refunded; and, an errata would be published in the March 9, 1993, Official Gazette with respect to the withdrawal of the application from issue. On March 10, 1993, a Notice of Abandonment acknowledging applicants' express abandonment of the application was mailed to applicants.

CHEN APPLICATION SERIAL NUMBER 08/006,423

On January 19, 1993, and before their first filed application Serial Number 07/907,261 became abandoned, Chen et al. filed application Serial Number 08/006,423 as a continuation of their

earlier filed application under the then current practice as a so-called "Rule 60" continuation. On the same date as the application was filed, Chen et al. filed two preliminary amendments to their continuing application. The first preliminary amendment was the standard request to accept the filing and set forth the fee, cross reference the prior application, note the prior assignment and power of attorney. Filed with the first preliminary amendment was an Information Disclosure Statement. In the IDS (Paper Number 4), Chen et al. represented that the originally filed application disclosed and claimed mixtures of 7-fluorotaxol derivatives, specifically, mixtures of 7-α- and 7-ß-fluorotaxols. According to the IDS, the inventors discovered after filing their first application that:

> what was once believed to be the ß-fluorotaxol derivatives were actually cyclopropataxol derivatives ...

Chen et al. concluded by indicating that their continuing application "claims cyclopropataxol derivatives in addition to the 7-α-fluorotaxol derivatives."

The second preliminary amendment canceled all the original claims in the application and added new claims 19 through 30. Claims 24, 25 and 26 were claims directed to cyclopropataxol derivatives not claimed or disclosed in the prior application and claim 28 was directed to a cyclopropyl baccatin derivative neither claimed nor disclosed in the prior application. Chen et al. filed an amendment on March 10, 1993, correcting the formulae in claims

19, 24, 27 and 28 in the second preliminary amendment filed on January 19, 1993.

In a first office action mailed on March 19, 1993, the examiner, *inter alia*: objected to the designation of the application as a "continuation"; rejected claims 19 through 30 under 35 U.S.C. § 112, first and second paragraphs; and, objected to the second preliminary amendment under 35 U.S.C. § 132 on the grounds that it contained "new matter" not disclosed in the originally filed application.

In a response filed on April 19, 1993, Chen et al. responded to the examiner's office action by canceling claims 24 through 26 and 28, all the claims directed to the cyclopropataxol derivatives and intermediates useful for preparing the cyclopropataxol derivatives. Chen et al. also traversed the examiner's various stated grounds of rejection and objections and indicated that, nevertheless, a third application, a continuation-in-part application, Serial Number 08/029,819 had been filed on March 11, 1993 "broadening the claims to 7,8-cyclopropataxols" while observing that "[c]laims to α-fluorotaxols still remain in the application."

On May 5, 1993, the examiner mailed a Notice of Allowability, indicating that claims 19 through 23, 27, 29 and 30 were allowed and also mailed a Notice of Allowance and Issue Fee Due on the same date. On August 8, 1993, Chen et al. filed an express abandonment

of the application.

THE INVOLVED CHEN PATENT

Chen et al. filed their application Serial Number 08/029,891 on March 11, 1993, before application Serial Number 08/006,423 became abandoned. Said application matured to U.S. Patent Number 5,254,580, which issued on October 19, 1993, and is Chen et al.'s involved patent in this proceeding. On April 16, 1993, Chen et al. filed an IDS (Paper Number 2). On May 5, 1993, responsive to the filing of the application and the IDS, the examiner mailed a Notice of Allowability and a Notice of Allowance and Issue Fee Due. On June 4, 1993, Chen et al. filed a "Preliminary Amendment" correcting several typographical errors in the specification and claims of the application (Paper Number 4). In response to Paper Number 4, the examiner sent a second Notice of Allowability and Notice of Allowance and Issue Fee Due on June 24, 1993 (Paper Number 5). Chen et al. responded by filing on June 26, 1993, an authorization to charge applicants' deposit account the requisite issue fees.

In an unnumbered paper created by the examiner on May 23, 1995, Chen et al. were advised pursuant to 37 C.F.R. § 1.607(d) that an applicant for patent was seeking to provoke an interference with Chen et al.'s patent. In a letter mailed on October 24, 1995, APJ Mary F. Downey, in the performance of her interlocutory duties, informed Chen et al. and Bouchard et al. that this proceeding was declared as Interference Number 103,675.

Although the law requires at least one embodiment within the count which satisfies all the requirements of 35 U.S.C. § 112, first paragraph, for Chen et al.'s motions to be granted, the sole issue raised here is whether Chen et al.'s earlier filed applications satisfy the "written description" requirement of the first paragraph of 35 U.S.C. § 112 for at least one embodiment within the counts in this interference[4].

WRITTEN DESCRIPTION

Although neither party has favored the record with their interpretation of the meaning of the counts, in order to determine whether or not Chen et al. have shown that their earlier filed applications include at least one embodiment within the counts which satisfies the "written description" requirement of 35 U.S.C. § 112, first paragraph, we must first interpret the counts.

A count is given its broadest, reasonable interpretation, based on the language of the count as a whole without resort to either party's respective disclosures unless the count is considered to be ambiguous. In this proceeding there are three counts, each of which is drafted in the so-called bifurcated style, that is, each count is the alternative of each party's broadest claim directed to the "same patentable invention" as defined in 37 C.F.R. § 1.601(n). We find no ambiguity in any of the counts.

Count 2 is directed to two alternative descriptions of

[4] It is possible for Chen et al.'s motion to be granted with respect to less than all the counts.

specific cyclopropyl derivatives of taxol. The first alternative corresponds to the compound claimed in Bouchard et al.'s involved application in claim 142 designated as corresponding to Count 2. The second alternative corresponds to the compound claimed by Chen et al. in claim 7 of their involved patent. Although the compounds are named using different terminology, the different terminology defines the same compound, that is, the compound depicted at page 81 of Chen et al.'s priority brief. Because Count 2 does not recite that the compound is either purified or isolated, we interpret Count 2 to embrace either the purified and isolated compound, *per se*, or a mixture of compounds which includes the compound defined by Count 2.

Count 3A is directed to a genus of compounds, defined by two different structural formulae. The first structural formula corresponds to the formula in Chen et al.'s claim 10 designated as corresponding to Count 3A. The second structural formula corresponds to the formula in Bouchard et al.'s claim 141 designated as corresponding to Count 3A. The compounds depicted in Count 3A are the so-called baccatin derivatives useful for preparing the compounds of Count 2 and Count 4. Once again, the language of the count does not literally describe a purified or isolated compound but "a taxoid" or "a compound" having a particular structural formula. Accordingly, we find that Count 3A is directed to either a purified or isolated compound having the

formula as recited in the count or a mixture of compounds which includes a compound having the structural formula of the count.

Count 4 is also directed to a genus of compounds represented by either the first structural formula which corresponds to the formula in Bouchard et al.'s claim 140 or a genus of compounds represented by the second structural formula which corresponds to the formula found in Chen et al.'s claim 1 designated as corresponding to Count 4. Because the count does not recite that the compounds are purified or isolated, we interpret the count to include purified and isolated compounds of the recited structural formula, *per se*, or mixtures of compounds which include a compound having the recited structural formula.

We now look to the disclosure in Chen et al.'s benefit applications to determine if the disclosure in said applications satisfies the "written description" requirement of the first paragraph of 35 U.S.C. § 112 for at least one embodiment within any of the counts. It is apparent from the facts in this case that no earlier filed application for which Chen et al. have moved for benefit for the various counts in this proceeding literally "describes", in the sense of the statute, any compound within the scope of the counts in this proceeding. Indeed, Chen et al.'s earlier filed applications are entitled "Fluoro taxols" and describe the fluorination of taxol with DAST, a well-known fluorinating compound. The applications describe obtaining only α-

and ß-isomers of 7-fluoroctaxol derivatives and mixtures of said isomers and not 7,8-cyclopropataxols. Thus, none of appellants' earlier filed applications satisfies the "written description" requirement of 35 U.S.C. § 112, first paragraph, for an embodiment within any of the counts in a literal sense.

Based on a theory of inherency, Chen et al. argue that whatever the nature of the compounds produced by said examples in their first filed application, the compounds prepared in the later filed application must be the same as the compounds prepared in the earlier filed applications because the examples describe the same procedures. According to Chen et al., Examples 5 and 6 of their earlier filed applications correspond exactly to Examples 22 and 23 of their involved patent in this interference. Based on the subsequent analysis in 1996 of compounds allegedly produced by exactly the same procedures as in said examples from the earlier filed applications, Chen et al. argue they have established that notwithstanding that the compounds were initially improperly identified, the examples in the earlier filed applications must have produced compounds within the count.

In his declaration of March 8, 1996, John F. Kadow, an employee of the assignee of the Chen et al. patent in this interference, testified that he or persons under his supervision repeated in 1996 examples 2, 3, 5 and 6 from Chen et al.'s first

filed application (CR 1007, line 23 through CR 1008, line 21[5]). According to Chen et al., repeating the examples from their first filed application demonstrates that the compounds prepared as described in the involved Chen et al. patent are necessarily obtained by following the examples in the first filed Chen et al. application. Based on the repeat of said examples, Chen et al. argue that compounds within each of the counts are described in the parent applications.

The preparation of the products from the examples in their first filed application is stated to have been repeated using "exactly" the same reagents and procedures described in the examples of Chen et al.'s first filed application for which they now seek benefit (CR 18, ¶7, last sentence). Kadow testified that the products obtained were purified and separated in the manner described in the examples from the first filed Chen et al. application (CR 18-20, ¶'s 8-11). Kadow testified that the products were analyzed using high field proton NMR and liquid chromatography/mass spectrometry and were found to be a "mixture of two major compounds", specifically, a mixture of α-F and cyclopropyl derivatives of taxol. It is argued that the repeat of

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[5] References to the Chen et al. record will be designated as CR, followed by the record page number, and references to the Chen et al. exhibits will be designated CX, followed by the exhibit number. References to the Bouchard et al. record will be designated as BR followed by the record page number. References to the Bouchard et al. exhibits will be designated by BX followed by the exhibit number.

the examples in 1996 thus establish that the parent application necessarily has examples directed to compounds within the scope of counts 2, 3A and 4. The basis for this conclusion is founded on the alleged fact that each peak from the NMR spectroscopy performed in the parent applications were subsequently "found" in NMR's of examples repeated in 1996 (CR 20, 21, ¶12).

It is argued by Chen et al. that the description in the earlier filed applications of mixtures of α- and ß-fluorotaxols and baccatin III's "describes" the compounds of the counts because, based on the work of Kadow and others, it was later proven that the compounds prepared were not mixtures of fluorine epimers but cyclopropyl derivatives. While Chen et al.'s petition to withdraw from issue filed in their first filed application evidences Chen et al.'s belief that they were mistaken in the identification of the nature of the products actually obtained by the procedures set forth in their application, Chen et al. have not favored the record either with the evidence which establishes the basis for their belief as expressed in the petition or when Chen et al. first "discovered" their alleged mistake.

In part, Chen et al. rely on Ex parte Marsili, 214 USPQ 904 (Bd. App. 1979) in support of their argument for granting their motion. In Marsili, an opinion dealing with the *ex parte* prosecution of a pending application in which applicants sought to change the structural formula for a compound originally believed to

include an imidazoline moiety to a structural formula where the ring was unsaturated, that is, an imidazole ring, there was evidence in the nature of analytical data and literature to support the propriety and scientific soundness of the proposed changes submitted during the prosecution of the application. Here, the difference is more than simply whether or not a ring moiety is saturated or unsaturated. Further, there was no evidence filed during the prosecution of Chen et al.'s earlier filed applications which established through analytical data or literature reference that the original disclosure improperly identified the products prepared from the fluorination of taxol with DAST or that the error would have been instantly recognized or readily discoverable by a person of ordinary skill in the art. In re Nathan, 328 F.2d 1005, 140 USPQ 601 (CCPA 1964) a case also relied on by Chen et al., is discussed in Marsili and in Nathan, as in the facts in Marsili, there was a showing filed during the prosecution of the application in question to support the proposed change in the disclosure from a generic "2-halo" substituent, which included both α- and ß-fluoro substituents, to a 2-α-halo substituent.

In our view, the first filed Chen et al. application is evidence that at the time Chen et al. filed their application the disclosure therein would have reasonably conveyed to the skilled routineer that fluorination of taxol with DAST, a known fluorination reagent, would have reasonably been expected from Chen et al.'s disclosure and from the knowledge possessed by the skilled

organic chemist at the time of filing, to yield a mixture of 7-fluorine epimers as described and obtained in the Chen et al. examples. Indeed, the following exchange from Dr. Kingston, a witness for Chen et al., is informative on this point:

> Q. In 1992, Professor Kingston, a reaction of DAST with 2 prime protected Taxol, is it fair to say that one would expect that that reaction would yield fluorination at the seventh position of the compound?
>
> A. That would be a reasonable expectation based on knowledge of DAST chemistry.
>
> Q. At that point in time.
>
> A. Yes.

See CR 1831, lines 4-12.

Dr. Kadow, the Bristol-Myers Squibb researcher who repeated in 1996 Examples 2, 3, 5 and 6 from Chen et al.'s first filed application, testified that:

> The cyclopropataxol compounds within the Counts are very complex. In addition, the discovery that those compounds were produced by reactions disclosed in the Chen parent applications was surprising.

CR 39. In explaining his testimony, Kadow stated that the discovery was surprising because:

> DAST reagent is a fluorinating reagent. So in general, one is using it to make fluorine-containing compounds.

See CR 1055, line 13 through CR 1056, line 17. Kadow testified that Chen would have reasonably interpreted the NMR spectrum for the compound prepared by him in October 1990 and shown in CX 21 to be for a one-to-one mixture of 7-α-F- and 7-ß-F-taxol isomers. CR 1093, line 9 through CR 1094, line 8. Kadow also testified that in

1992, when the Chen et al. application was filed, it was "reasonable" for Dr. Chen to have concluded that the NMR spectrum for the products of Examples 3, 5 and 6 was "consistent" with a mixture of 7-fluorotaxol alpha and beta isomers as reported in the examples. CR 1166-67; CR 1169-70; CR 1172-73.

A discovery made after filing the first filed Chen et al. application, and a discovery said to be "surprising", does not support Chen et al.'s argument that a person of ordinary skill in the art would have recognized, from the first filed application's disclosure at the time of its filing, that cyclopropyl derivatives were obtained or would have been expected to be obtained from the fluorination of taxol with DAST, a known fluorination agent. To the contrary, we consider Kingston's and Kadow's testimony above to be evidence which supports a conclusion that the Chen et al. applications would not have been recognized by a person of ordinary skill in the art at the time they were filed as "describing" (in the sense of the statute) the compounds allegedly discovered by Chen et al. after they filed their applications.

We also find unpersuasive Chen et al.'s argument that based on the NMR data in the examples from their first filed application, a person of ordinary skill in the art at the time the first application was filed would have recognized from the NMR data alone that the compounds prepared included the cyclopropyl derivatives of the counts. There is absolutely no evidence in the record which supports such a position. Indeed, we consider the testimony of

various witnesses, including Kadow (CR 40,41), Kingston (CR 1823, lines 15 through 24; CR 1825, lines 1 through 10)) Huang (CR 664-65), and Kant (CR 2169) that: without prior knowledge of what compound was expected to be produced by a particular reaction; without an existing NMR spectra for a sample known to be that of the compound sought to be produced to compare with the NMR of the compound actually produced; and without other physical data characteristic of the target compounds, the NMR data alone would have been insufficient for purposes of identifying the products of Examples 2, 3, 5 and 6 as cyclopropyl derivatives.

We have carefully considered the various cases cited and relied on by Chen et al. and alleged to establish that under certain fact scenarios an earlier filed disclosure may, inherently, describe subject matter later claimed by an applicant for patent. Questions of inherency are questions of fact[6] and Chen et al. have failed to allege or set forth facts which would support a finding of inherency. Rather, the facts, as discussed above, support a conclusion that it has not been established that the cyclopropyl derivatives must necessarily be produced by the disclosed synthesis.

Further, we do not understand any of the cases on which movant relies to stand for such a broad proposition as is argued. The "written description" requirement of the statute serves, in part,

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[6] Continental Can Co. v. Monsanto Co., 948 F.2d 1264, 1268-69, 20 USPQ2d 1746, 1749-50 (Fed. Cir. 1991).

as notice that an applicant for patent was possessed, as of the filing date of his first filed or earlier application, of the subject matter later claimed by him in a later filed application. Simply stated, compounds of the counts in this proceeding were, admittedly, not literally described in the earlier applications because the inventors did not appreciate at the time the earlier applications were filed that the compounds were prepared by the disclosed synthesis. Moreover, it appears from the evidence proffered by movants, considered in a light most favorable to their position, that the earlier filed application describes the preparation of a mixture of compounds rather than any single compound. There is no evidence which establishes that a person of ordinary skill in the art, reading the first filed Chen et al. application at the time it was filed, would have readily understood that instead of obtaining mixtures of 7-fluoro-isomers, mixtures of 7-α-fluoro isomers and 7,8-cyclopropataxols would have been expected to be obtained by performing the steps set forth in the examples.

From the record, it is clear that the first indication in the first filed application for which Chen et al. seeks benefit that Chen et al. believed the products produced therein to be other than the disclosed mixture of α- and ß-epimers of the F-taxol derivative synthesized was in January 1993 when the petition to withdraw the application from issue was filed. Nevertheless, there was simply no evidence filed with the petition, nor any in this proceeding, which

established the basis on which Chen et al. formed their newly found belief as to the nature of the final products. The tenor of the first filed application is otherwise clear. Fluorinated derivatives of taxol prepared using diethyl amino sulfur trifluoride (DAST), a known fluorinating agent, were obtained.

In our view, Chen et al. have fallen into the practice of first presenting decisions from our reviewing courts generally related to the question before us but in which decisions the facts differ substantially from the facts before us and then crafting a rule of law from these cases said to be applicable to all cases regardless of the facts. As the court cautioned in In re Edwards, 568 F.2d at 1354, 196 USPQ at 469:

> suffice it to say that each case must be decided on its own facts, see, e.g., In re Driscoll, *supra*, and that precedential value of prior cases is, therefore, extremely limited.

In all the cases cited by Chen et al., the error from the original disclosure which was subsequently corrected was an error which was found to have been obvious to a person of ordinary skill in the art at the time the application in question was filed. Alternatively, in the cases cited, there was evidence proffered in said cases during the prosecution and the weight of that evidence established the error in the involved application would have been readily apparent to a person of ordinary skill in the art.

The decisions from our reviewing courts on this issue make clear that satisfaction of the written description requirement of

the first paragraph of 35 U.S.C. § 112 and questions of inherency are factual inquiries, decided on a case-by-case basis. Here, therefore, the inquiry is, with respect to the first filed application for which Chen et al. seek benefit, do the facts establish that there existed in said earlier filed application an embodiment within any of the counts which satisfies 35 U.S.C. § 112, first paragraph. On its face, the first filed application was directed to mixtures of fluorine epimers of a taxol derivative not cyclopropyl derivatives. Additionally, the evidence in this proceeding establishes that the disclosure in said first-filed application reasonably conveyed to a person of ordinary skill in the art the preparation of mixtures of 7-fluoro-taxol epimers not cyclopropyl derivatives and would have been understood by a person of ordinary skill in the art at the time the application was filed to be directed to fluorinated epimers of taxol derivatives not cyclopropyl derivatives. Indeed, Chen et al.'s evidence establishes that, assuming *arguendo*, cyclopropyl derivatives were prepared, such a discovery would have been considered unexpected or "surprising."

Accordingly, Chen et al. have failed to prove that they are entitled to the relief requested in their motions and the Chen et al. motions for benefit are, therefore, DENIED.

BOUCHARD ET AL.'S MOTIONS BRIEF

According to Bouchard et al.'s motions brief there are therein

six issues presented for our decision. Specifically, Bouchard et al. seek review of the APJ's interlocutory decisions regarding:

1) - Bouchard et al.'s motion under 37 C.F.R. § 1.635 to file belated motions for judgment under 37 C.F.R. § 1.633(a) and filed on March 6, 2000 (Paper Number 248);

2) - Bouchard et al.'s motions to reopen testimony filed on February 14, 2000 (Paper Number 238), and March 6, 2000 (Paper Number 247);

3) - Bouchard et al.'s miscellaneous motion filed on March 6, 2000, and requesting the APJ to exercise her discretion under 37 C.F.R.§ 1.641(a) (Paper Number 250);

4) - Bouchard et al.'s motion filed on April 3, 1996 (Paper Number 26), under 37 C.F.R. § 1.633(f) for benefit of their French application should Chen et al.'s deferred preliminary motion under 37 C.F.R. 1.633(c)(1) be granted (Paper Number 22); and,

5) - Bouchard et al.'s motion filed on July 16, 1996 (Paper Number 49) to strike certain evidence proffered by Chen et al. with their reply to certain Bouchard et al. oppositions.

Bouchard et al. also request under 37 C.F.R. § 1.655(c) that we consider their preliminary motions denominated as Bouchard Preliminary Motions 9 and 10 and filed on March 6, 2000, as Paper Numbers 249 and 251, respectively.

We begin by observing that Bouchard et al.'s motion for benefit was contingent on the granting of Chen et al.'s deferred motion under 37 C.F.R. § 1.633(c)(1). Because Chen et al. have chosen not to pursue their motion which was deferred to final hearing, the event upon which Bouchard et al.'s motion was contingent has not occurred. See, also page 1 of Chen et al.'s opposition brief. Therefore, Bouchard et al.'s motion for benefit is DISMISSED as moot.

Bouchard et al.'s miscellaneous motion seeking to file two belated motions for judgment and Bouchard et al.'s request that the APJ exercise her discretion each concerned Bouchard et al.'s motions for judgment on the grounds of non-enablement under 35 U.S.C. § 112 and on the grounds that Chen et al. committed "inequitable conduct" before the United States Patent and Trademark Office in the prosecution of their involved patent in this interference.

We agree with the APJ's conclusion that Bouchard et al.'s miscellaneous motion to accept belatedly Bouchard et al.'s motions under 37 C.F.R. §1.633(a) was properly denied because Bouchard et al. failed to establish "good cause" under 37 C.F.R. § 1.645(b) for why the motions were not timely filed. On this record, Bouchard et al.'s argument about only having discovered the alleged inequitable conduct after the testimony phase was complete rings hollow. As correctly observed by the APJ, Bouchard et al. had more than ample time from the date of the declaration of this interference through the testimony period in which to pursue their theory of unpatentability based on inequitable conduct and enablement. There can be no justification for Bouchard et al.'s conscious decision to wait until after the testimony phase of this proceeding had concluded to attempt to raise these issues in this proceeding.

As admitted by Bouchard et al. in their statement of facts, Bouchard et al.'s "suspicions" about the separation technique used in the examples from Chen et al.'s first filed application were

raised during the cross examination of Chen et al.'s witnesses in the time period ranging from November 1996 through February 1997. Bouchard et al. have failed to adequately explain why, in light of their aroused "suspicions" in 1997 they waited until the fall of 1999 to repeat the examples of Chen et al.'s involved patent. As Bouchard et al. have observed, Chen et al. served their evidence for their case-in-chief in late October 1996, and it was the alleged absence from that evidence of the nature of the sample given to Mr. Pack for separation that further raised Bouchard et al.'s suspicions.

We also agree with the APJ's observations as set forth in Paper Number 284 that there is no adequate explanation for why Bouchard et al. waited until 1999 to file a motion on issues that could have been and should have been raised during the preliminary motions period or at least as early as October 1996, when Bouchard et al. believed the evidence submitted by Chen et al. did not comport with the position taken by Chen et al. in their case-in-chief. In the words of the APJ, "Waiting more than three years after suspicions arose is not a valid excuse for failing to act in a timely manner." Page 8 of Paper Number 284. This is especially so because Bouchard et al. eschewed acting in the time period specifically afforded the parties for taking "testimony on the issue of whether examples 3, 5 and 6 of the benefit applications produce compounds within the scope of the counts ..." set by the APJ in her decision on August 22, 1996 (Paper Number 53).

We have not overlooked Bouchard et al.'s argument that they did not file the motion in 1996 because they only had suspicions and not the evidence they recognized was required to justify granting their motion for judgment. Nevertheless, the interference rules provide[7] that in such an instance the proper action to take is to: file the motion for judgment; explain the nature of the evidence which would support granting the relief requested in the motion; name the person or persons who would testify and what said person or persons would testify to as set forth in 37 C.F.R. § 1.639(d) through (g); represent on information and belief that the evidence was in the possession of Chen et al.; file a motion for additional discovery of that evidence under 37 C.F.R. § 1.687(c); and, request deferral of a decision on the motion until final hearing. This Bouchard et al. did not do.

Having failed to establish "good cause" for belatedly raising the issues of inequitable conduct and enablement under 37 C.F.R. § 1.633(a), Bouchard et al. then attempted a second "bite at the apple" by raising the same issue but under the color of a request in the form of a miscellaneous motion under 37 C.F.R. § 1.635 requesting that the APJ exercise her discretion and issue an order permitting the parties to express their views on the issue. We consider Bouchard et al.'s request that the APJ exercise her discretion under 37 C.F.R. § 1.641 to be a not so thinly veiled

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[7] 37 C.F.R. § 1.639(c) and 37 C.F.R. § 1.639(e).

attempt to circumvent the orderly procedures established by the rules and followed by the APJ in the interlocutory phase of this proceeding. As correctly observed by the APJ in her decision declining to exercise her discretion and declining to enter an order permitting the parties to express their views on the issue of alleged inequitable conduct, the rule expressly entrusts that decision to the sound discretion of the APJ. Specifically, the rule permits an APJ who becomes aware of a reason why a claim designated as corresponding to the count is unpatentable to allow the parties to express their views on the matter or even file responsive motions under the preliminary motions rules. As correctly noted by the APJ in her decisions on this matter (see Paper Numbers 269 and 284), Section 1.641 may not be relied on to thwart the interference rules which place the burden of establishing unpatentability in a preliminary motion on movant.

Bouchard et al.'s argument that the APJ's decision denying their motion was unreasonable because the APJ never considered Bouchard et al.'s reply to Chen et al.'s opposition is clearly erroneous on this record. In Paper Number 284, mailed on July 11, 2000, the APJ specifically reconsidered her earlier decision but in light of Bouchard et al.'s reply and, again, declined to exercise her discretion under Section 1.641. As correctly observed by the APJ, Bouchard et al. failed to establish both that the motion was filed as soon as it was discovered and that the evidence in support of the request could not have been discovered earlier.

Additionally, Bouchard et al.'s miscellaneous motion requesting the APJ to exercise her discretion stated that their belated preliminary motions No.9 and No. 10 "bring to the attention of the APJ reasons why the claims in the '580 patent designated as corresponding to the count may not be patentable" (emphasis added). A party who charges an opponent with a "failure to disclose" form of inequitable conduct must offer clear and convincing proof of the following elements: (1) materiality of the withheld prior art or information; (2) knowledge chargeable to the opponent (including the opponent's counsel) of that prior art or prior information; and, (3) an intent to mislead the PTO. Kingsdown Medical Consultants Ltd. v. Hollister Inc., 863 F.2d 867, 872, 9 USPQ2d 1384, 1389 (Fed. Cir. 1988) (en banc), cert. denied, 490 U.S. 1067 (1989). Clear and convincing evidence has been described as evidence which produces in the mind of the trier of fact an abiding conviction that the truth of a factual contention is "highly probable". Price v. Symsek, 988 F.2d 1187, 1191, 26 USPQ2d 1031, 1034 (Fed. Cir. 1993), citing Colorado v. New Mexico, 467 U.S. 310, 316 (1983). Suspicions as expressed in Bouchard et al.'s belated motions and their miscellaneous motion do not rise to the level of clear and convincing evidence. Accordingly, the APJ properly exercised her discretion and declined to permit the parties to brief an issue which should have been raised earlier.

Bouchard et al.'s third "bite at the apple" is represented by their request that should we uphold the APJ's refusal to consider

the belated motions under 37 C.F.R. § 1.633(a) and should we uphold the APJ's decision declining to exercise her discretion and permit the parties to present their views on the issues raised by the aforementioned belated motions then we should, in the interest of justice, take up these very same issues under our discretionary authority under 37 C.F.R. § 1.655(c). We decline to take up these issues because we find they have been raised belatedly without adequate reason for not raising them at the appropriate time or when the issues were first discovered by Bouchard et al. Manifestly, it would not be in the interest of justice to permit one party to circumvent the orderly procedures established for conducting an interference at the expense of their opponent. Moreover, conclusory statements as found in Bouchard et al.'s statement of "facts" as set forth in paragraphs 52 and 53 are inadequate to establish that Bouchard et al. are entitled to the relief requested. Accordingly, Bouchard et al.'s request is **DENIED**.

Bouchard et al.'s request that we overturn the APJ's decision denying their motions to reopen testimony is **DENIED**. Bouchard et al. argue that the APJ's denial of their request was unreasonable because: (1) the APJ rendered her opinion before Bouchard et al. were able to file their reply to Chen et al.'s opposition to the request; (2) the APJ granted the request but then reversed her decision and denied the request; and, (3) the APJ's decision denying the motion to reopen was colored by her unreasonable denial of Bouchard et al.'s discovery requests and her failure to decide

Bouchard et al.'s requests for reconsideration. For reasons which follow, we find Bouchard et al.'s arguments to be unpersuasive.

Bouchard et al.'s first stated reason ignores the record in this proceeding. In her subsequent decision rendered on July 11, 2000, the APJ specifically revisited her earlier decision but in light of Bouchard et al.'s reply to Chen et al.'s opposition. The record is also clear that the APJ denied Bouchard et al.'s motion. See page 11 of Paper Number 284.

Bouchard et al.'s second reason why the APJ's decision denying their motion should be overturned also ignores the record in this proceeding. In her decision deferring the Chen et al. motions for benefit until final hearing, the APJ afforded both parties the opportunity to take testimony on the issue of whether examples 3, 5 and 6 of Chen et al.'s earlier filed applications for which they sought benefit "produce compounds within the count." In Paper Number 54, the APJ set a testimony period for the parties to present their respective cases for priority and to take testimony on the specific issue deferred by the APJ to final hearing in her decision on motions. The testimony period set by the APJ was to close on March 27, 1997, and was extended to close on April 8, 1997, by the APJ in her order of October 1, 1996 (Paper Number 63).

All the evidence which Bouchard et al. seek to have admitted in the record was evidence obtained after the close of the testimony period or, based on the dates of the documents sought to be entered, was evidence which was available to Bouchard et al.

before the testimony period closed. Moreover, all the evidence Bouchard et al. seek to have entered is evidence which should have been proffered during the time period specifically set by the APJ for the parties to address whether the examples in Chen et al.'s earlier filed application actually produce compounds within the count. Further, the evidence Bouchard et al. seek to enter is evidence taken by them to support their preliminary motions against Hester et al., a third party added to and then later removed from this proceeding. We fail to see the relevance to this proceeding of evidence taken to support a motion against a third party now in a different proceeding and not a party to this proceeding. See page 15, paragraph 33 of Bouchard et al.'s motion brief.

Bouchard et al. urge that we should overturn the APJ's decision denying their motion to reopen essentially because the APJ changed her mind. It is, of course, the propriety of the APJ's final decision on this issue which we review, not her earlier oral rulings made without the actual benefit of the motions and the evidence supporting the motions. Bouchard et al. do not argue that the APJ exceeded her authority by changing her decision.

In light of Bouchard et al.'s expressed position on this matter, we feel compelled to reproduce (without footnotes) Item #5 from pages 7 and 8 of the APJ's decision of April 25, 2000, on which she relied in denying Bouchard et al.'s motion to reopen in Paper Number 284. Specifically, Judge Downey stated:

> The undersigned finds no good cause for the entry of the

evidence that Bouchard were in possession of before the close of their extended testimony period and failed to introduce or for the entry now in the year 2000 for documents they possessed some years earlier. Further the APJ finds no good cause for entry of evidence recently adduced (2000) for use at final hearing to buttress an opposition filed in May 1996 or a motion that could have been filed in March of 1996.

Since Exhibits 1-45 will not be entered, there is no good cause for entry of the declarations in support thereof. 37 C.F.R. § 1.671(f) requires the explanation of all exhibits relied on by a party. Bouchard also offers items 4-9 in support of belated motions No. 9 and 10, which motions have been dismissed. Accordingly, Bouchard's testimony period will not be reopened to add this evidence.

Bouchard argue that the undersigned APJ should reopen their testimony because she agreed to reopen their testimony in an earlier conference call. However, after careful consideration of the motion and opposition, the undersigned APJ finds that she misspoke before review of the motion and opposition took place.

Bouchard also argue that the additional evidence should be entered because it was conducted pursuant to the APJ's sua sponte suggestion to conduct testing. In support of this argument, Bouchard refers to their recollection of a statement allegedly made by the APJ in May 1997, regarding testing (See the Bouchard Request for reconsideration No. 3). Bouchard also refers to the APJ's order of February 18, 2000.

In the view of the undersigned, Bouchard has misinterpreted the undersigned statements as a sua sponte suggestion for the parties to adduce additional evidence outside the assigned testimony periods. The APJ's statements must be taken in proper context with the interference rules which provide for orderly procedure. Authorization for the parties to take testimony was given in the Decision on Motion (Paper No. 53) and time was set for taking such testimony, (Paper No. 54) which testimony would be reviewed by the Board at final hearing.

We have not overlooked Bouchard et al.'s various arguments concerning alleged oral representations made by the APJ in certain telephonic conferences. We simply remind Bouchard et al. that all business with the PTO should be conducted in writing and that no attention will be paid to any alleged oral promise, stipulation or understanding in relation to which there is disagreement. See 37

C.F.R. § 1.2. Further, as the interference rules themselves suggest, (see, for example, 37 C.F.R. §§1.618 and 1.646) an interference is conducted on the written record based on the papers filed and served by the parties to the proceeding.

We find it difficult to understand Bouchard et al.'s argument concerning how the APJ's treatment of their various requests for reconsideration is relevant to the issue before us. By Bouchard et al.'s own statement of the facts, their second request for reconsideration was denied and they withdrew their third request for reconsideration.

As for Bouchard et al.'s alleged "reliance" on the APJ's representations, we first observe that some of the evidence sought to be entered was the evidence taken by Bouchard et al. to support a motion against Hester et al. in another proceeding. As we understand Bouchard et al.'s explanation of the facts, that evidence had been filed in the other proceeding in November 1999. Accordingly, Bouchard et al. could not have relied on the APJ's "representations" in this proceeding to "diligently prepare its evidence" in February 2000, when that evidence had already been taken and filed in another proceeding in November 1999. Accordingly, we find that the motions to reopen were properly dismissed or, in the alternative, properly denied.

Finally, Bouchard et al. urge that the APJ should have granted its motion to strike certain evidence filed by Chen et al. with their reply to Bouchard et al.'s opposition to Chen et al.'s

preliminary motions for benefit. We disagree. As correctly noted by the APJ, because she deferred the motions for benefit to final hearing and gave the parties a testimony period for taking evidence on the issues raised by the motions for benefit, the motion to strike the evidence was rendered moot.

THE MOTIONS TO SUPPRESS

Both parties have filed motions to suppress certain evidence proffered by their respective opponent in this interference. Chen et al. seek in two, separate motions, to exclude (suppress) various parts of Bouchard et al.'s record and certain of Bouchard et al.'s exhibits. Bouchard et al. seek to exclude (suppress) all laboratory notebooks of Ms. Jianmei Wei from the evidence on which Chen et al. may rely and all of Dr. Chen's testimony relating to the laboratory notebooks of Ms. Jianmei Wei.

CHEN ET AL. MOTIONS TO SUPPRESS

Chen et al.'s first motion to suppress seeks to exclude various parts of Bouchard et al.'s record and various Bouchard et al. exhibits. All the materials sought to be suppressed relate to Bouchard et al.'s various motions which have either been dismissed or denied above in our decision on the parties' motions briefs. Accordingly, Chen et al.'s first motion to suppress is DISMISSED as moot.

Similarly, Chen et al.'s second motion to suppress seeks to exclude evidence relevant to motions brought by Bouchard et al. pursuant to 37 C.F.R. § 1.655(a). Because we have, above, denied

Bouchard et al.'s motions under § 1.655(a), Chen et al.'s request is DISMISSED as moot.

BOUCHARD ET AL. MOTION TO SUPPRESS

Bouchard et al. filed a motion to suppress (Paper Number 290) and a belated, supplemental motion to suppress (Paper Number 291). According to Bouchard et al., their supplemental motion to suppress was filed for the purpose of complying with the APJ's interlocutory order of April 25, 2000, which was "overlooked" by Bouchard et al. when they filed their motion to suppress. According to Bouchard et al., Chen et al. will not be prejudiced by the belated supplemental motion to suppress because it is strictly procedural in nature and does not seek to suppress any additional evidence beyond what was sought to be excluded in the original motion. Chen et al. have opposed Bouchard et al.'s motion under both § 1.635 and §1.656(h). According to Chen et al., Bouchard et al.'s belated motion should be denied because they have failed to show "good cause" as required by § 1.645(b). Additionally, Chen et al. argue that Bouchard et al. have added additional substantive arguments in their supplemental motion.

We agree with Bouchard et al. that the requirements for a motion under §1.656(h) are set forth in the rule and that Bouchard et al.'s originally filed motion satisfied the requirements of that rule. While we do not condone the failure of Bouchard et al. to follow the APJ's interlocutory order, whether through inadvertence or otherwise, we agree with Bouchard et al. that Chen et al. are

not prejudiced by the supplemental motion because the motion does not seek to exclude any materials whose exclusion was not sought in the original motion. Further, because Bouchard et al. recognized their omission promptly and both filed and served the supplemental motion after consulting with counsel for Chen et al. within 6 (six) days of filing the original motion, we find no prejudice to Chen et al. in the belated filing and shall accept the belatedly filed supplemental motion to suppress. Accordingly, Bouchard et al.'s motions under §§ 1.635/1.645 to accept belatedly the supplemental motion under §1.656(h) are GRANTED.

Bouchard et al. seek to exclude all of Chen et al.'s exhibits which are the laboratory notebooks of Ms. Jianmei Wei and certain associated documentary scientific data on the grounds that they constitute impermissible hearsay. Additionally, Bouchard et al. seek to exclude all of Dr. Chen's testimony which refers to or discusses Ms. Wei's laboratory notebooks and the associated documentary scientific data.

We begin by noting that the first sentence of 37 C.F.R. § 1.671(b) recites that:

> (e)xcept as otherwise provided in this subpart, the Federal Rules of Evidence shall apply to interference proceedings.

Federal Rule 802, is captioned "**Hearsay Rule**" and reads as follows:

> Hearsay is not admissible except as provided by these rules or by other rules prescribed by the Supreme Court pursuant to statutory authority or by Act of Congress.

and applies to any evidence presented at final hearing for our

consideration. Hearsay is defined in part (c) of Federal Rule 801 (captioned "**Definitions**") as:

> 'Hearsay' is a statement, other than one made by the declarant while testifying at the trial or hearing, offered in evidence to prove the truth of the matter asserted.

Part (a) of Federal Rule 801 defines "statement" as follows:

> A 'statement' is (1) an oral or written assertion or (2) nonverbal conduct of a person, if it is intended by the person as an assertion.

It is against the background of these definitions from the Federal Rules of Evidence that we consider the Bouchard et al. motion to suppress and the supplemental motion to suppress.

Bouchard et al. move to suppress the exhibits which consist of various pages from the alleged laboratory notebook of Ms. Jianmei Wei and the scientific data associated with her laboratory notebooks. As correctly observed by Bouchard et al., Ms. Wei did not testify in this proceeding. Dr. Chen, one of the named co-inventors of Chen et al.'s involved patent, did testify about Ms. Wei's alleged involvement in reducing to practice a compound within one of the counts. Chen et al. rely on Dr. Chen's testimony concerning Ms. Wei's laboratory notebooks and associated scientific data as evidence which establishes an actual reduction to practice of the subject matter of the counts on a date prior to Bouchard et al.'s effective filing date of December 9, 1992.

We find that Ms. Wei's laboratory notebooks and the associated scientific data are statements (written assertions) other than one

made by the declarant (Dr. Chen) while testifying which are being offered to prove the truth of the matter asserted (an actual reduction to practice prior to Bouchard et al.'s effective filing date). Thus, pursuant to 37 C.F.R. § 1.671(b) and Federal Rule 802, Ms. Wei's laboratory notebooks and the associated scientific data are hearsay. We observe that Chen et al. do not argue that the materials whose exclusion is sought are not hearsay.

Notwithstanding our determination above that Ms. Wei's notebooks and associated scientific data are hearsay, they would not be excluded from the evidence if Chen et al. could establish that they came within any of the hearsay exceptions set forth in Federal Rule 803 (**Hearsay Exceptions; Availability of Declarant Immaterial**) or Federal Rule 807 (**Residual Exception**), formerly Federal Rule 803(24). For reasons set forth fully below, we find that Chen et al. have not established that Ms. Wei's laboratory notebooks or the associated scientific data come within any of the exceptions in Federal Rule 803 or under Federal Rule 807.

In their opposition, Chen et al. argue that the type of evidence which Bouchard et al. seek to exclude "lie at the heart of almost all interferences":

> And, it falls squarely within either the "business records" or "catchall" exceptions to the hearsay rule, Fed. R. Evid.803(6) and (24) and is therefore admissible.

By invoking the hearsay exceptions of the Federal Rules, Chen et al. have implicitly conceded that the documentary materials and testimony concerning said documentary materials sought to be

excluded are hearsay under Federal Rule 802. Accordingly, the narrow issue for us to decide is whether or not Chen et al. have established that the documentary evidence falls within one of the hearsay exceptions set forth in the rules.

In order to come within the exception under Federal Rule 803(6), Chen et al. were required to prove, in the words of the rule, that the laboratory notebooks and the associated scientific data were:

> made at or near the time by, or from information transmitted by, a person with knowledge, if kept in the course of regularly conducted business activity, and if it was the regular practice of that business activity to make the memorandum, report, record, or data compilation, all as shown by the testimony of the custodian or other qualified witness, unless the source of information or the method or circumstances of preparation indicate lack of trustworthiness.[8]

Chen et al. have not produced the "custodian" of Ms. Wei's laboratory notebooks but instead rely on the testimony of Dr. Chen, an inventor of Chen et al.'s involved patent, as a "witness with knowledge" under Federal Rule 803(6) for the purpose of establishing that "Ms. Wei regularly maintained lab notebooks memorializing the tests she conducted for him. (Chen, CR-1763, lines 8-10.)" See page 3 of Chen et al.'s opposition. The entirety of the referenced testimony of Dr. Chen from CR 1763, lines 8

[8] Federal Rule 803(6) was amended effective December 1, 2000, after Chen et al.'s opposition was filed, to provide that in addition to the "testimony of a custodian or other qualified witness", the record of regularly conducted activity could be established by certification pursuant to Federal Rule 902(11) or 902(12).

through 10 is:

Q. Did you also review Ms. Wei's notebooks?

A. Yes.

Additionally, Chen et al. rely on Dr. Chen's testimony at CR 1683, lines 19 through 22; CR 1762, lines 14 through 18; CR 1763, lines 3 through 10 and CR 1771, lines 1 through 12 for the purpose of authenticating Ms. Wei's notebooks and associated scientific data. Dr. Chen's relevant testimony from the record cited in their opposition is, respectively, as follows:

Q. Is this Ms. Wei's notebook?

A. This is Jianmei's notebook.

Q. Did you supervise her?

A. Yes. (CR 1683)

Q. .... Now, did Ms. Wei report to you, Dr. Chen, at some point?

A. Yes. She report to me during the time period we covered. (CR 1762)

Q. Did you supervise her closely?

A. Yes. I discussed chemistry with her every day, and she bring the spectra, NMR spectra she obtain to me, for the structure assignment.

Q. Did you also review Ms. Wei's notebooks?

A. Yes. (CR 1763)

Q. Dr. Chen, you have in front of you Exhibit 326. What is that exhibit?

A. This is an NMR spectra for compound product described in Jianmei's notebook 33024-52, as marked on this spectra by Jianmei herself.

Q. Is there a date on that spectra?

A. Yes.

Q. What's the date?

A. The date is May 1, 1992.

Q. Now, did you review that spectra at the time it was obtained back in May of 1992?

A. Yes. (CR 1771)

But, as an inventor, Dr. Chen's testimony requires corroboration[9] and there is no corroboration of Dr. Chen's testimony by any non-inventor. Additionally, except for **CX** 326, the testimony lacks adequate specificity to establish the existence of any of the other materials sought to be excluded. We find Dr. Chen's terse testimony to be substantively insufficient and legally inadequate to prove what exactly were Ms. Wei's record keeping habits or procedures. Thus, there is no adequate showing under Federal Rule 803(6) to establish the objected to documents were "records of regularly conducted activity."

Even more importantly, however, we find Ms. Wei's notebooks and the associated scientific data lack adequate authentication in this record under the relevant rule. Federal Rule 901 (**Requirement for Authentication or Identification**) required as a condition precedent to admissibility "evidence sufficient to support a finding that the matter in question is what its proponent claims."

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[9]Holmwood v. Sugavanam, 948 F.2d 1236, 1239, 20 USPQ2d 1712, 1715 (Fed. Cir. 1991).

Specifically, since Ms. Wei has never testified and because the testimony of Dr. Chen, a named inventor, has not been corroborated, whether the various notebook pages and associated scientific data are, indeed, the notebook pages and associated scientific data of Ms. Wei has not been established on this record. We also observe that Dr. Chen did not testify that he observed Ms. Wei prepare any of the documents in question.

We also note that noteworthy by its absence in Chen et al.'s brief or in their record, is any evidence that the real party in interest, Bristol-Myers Squibb, in the relevant time period, required laboratory researchers such as Ms. Wei, to keep official notebooks or to record data in such notebooks in any particular fashion. Thus, we simply do not have adequate information on which to find that Ms. Wei's laboratory notebooks were "kept in the course of a regularly conducted business activity, and if it was the regular practice of that business activity to make the memorandum, report, record, or data compilation". Federal Rule 803(6).

Alternatively, Chen et al. also invoke what they refer to as the so-called "catchall" hearsay exception of Federal Rule 807 (**Residual Exception**), although Chen et al. incorrectly refer to the rule as part of Federal Rule 803(24), as a reason for admitting the hearsay Bouchard et al. seek to exclude. Remarkably, Chen et al. offer as evidence of the "circumstantial guarantees of trustworthiness" required by the rule the very same documents of

Ms. Wei which Bouchard et al. seek to exclude! Nonetheless, Chen et al. made a conscious, deliberate decision not to call Ms. Wei to testify and, therefore, they may not rely on her status as a non-inventor or her alleged truthfulness in preparing the challenged documents in an attempt to satisfy part of the requirements of the rule. Additionally, as noted by Bouchard et al., Chen et al. have utterly failed to address let alone satisfy the requirements of the last sentence of Federal Rule 807. Finally, as we observed above, there has been no adequate authentication of Ms. Wei's notebooks and the associated scientific data.

According to Chen et al., Bouchard et al. did not object to the authenticity of CX 326 at the time it was proffered during the re-direct of Dr. Chen by Mr. Taylor. Chen et al. urge that for that reason the Bouchard et al. motion to suppress should be denied with respect to CX 326. But Bouchard et al. did object to CX 326 as being inadmissible hearsay, on the record, during Dr. Chen's testimony. See CR 1771, lines 20 through 23; CR 1777, line 23 through 1778, line 8. Bouchard et al.'s timely objection on the record for any reason under the Federal Rules was all that was required under 37 C.F.R. § 1.656(h) to preserve their right to move to exclude the exhibits in question.

CX 85

As a separate issue, Chen et al. urge that we should not exclude CX 85, which is admitted by Chen et al. to be hearsay, because Bouchard et al. failed to timely object to its

admissibility. 37 C.F.R. §§ 1.656(h) and 1.658(d). Chen et al. cite to Flehmig v. Giesa, 13 USPQ2d 1052, 1056 n.7 (Bd. Pat. App. & Int. 1989) in support of their argument.

We agree with Chen et al. that Bouchard et al. failed to follow the proper procedure for preserving their right to move to suppress **CX** 85. However, because **CX** 85 is an alleged notebook page of Ms. Wei who has never testified in this proceeding, **CX** 85 has never been adequately authenticated which is a prerequisite to admissibility. Accordingly, pursuant to our authority under 37 C.F.R. § 1.655(a) we shall not consider **CX** 85, notwithstanding Bouchard et al.'s procedural failure to object to **CX** 85 as hearsay, because it has not been authenticated. We also note that Chen et al. do not argue that **CX** 85 is not hearsay. According to Federal Rule 802 "[h]earsay is not admissible except as provided by these rules ...." Because 37 C.F.R. § 1.671(b) adopts the Federal Rules of Evidence and because Chen et al. have not proved that **CX** 85 is admissible under one of the hearsay exceptions of the Federal Rules, we are not required to consider **CX** 85 both because it has not been authenticated and because it is impermissible hearsay.

Accordingly, because we have decided to grant Bouchard et al.'s motion to exclude Chen et al.'s documentary evidence on the grounds that it is impermissible hearsay, we shall also exclude Dr. Chen's uncorroborated testimony concerning the excluded documentary evidence.

Bouchard et al.'s motion to suppress and the supplemental

motion to suppress are GRANTED.

THE CASE FOR PRIORITY

Bouchard et al., by virtue of the filing date of their French benefit application, are the senior party in this interference. Accordingly, Chen et al., the junior party, bear the burden of proving priority of invention by a preponderance of the evidence. Morgan v. Hirsch, 728 F.2d 1449, 1451, 221 USPQ 193, 194 (Fed. Cir. 1984); Peeler v. Miller, 535 F.2d 647, 651, 190 USPQ 117, 120 (CCPA 1976); 37 C.F.R. § 1.657(b).

Chen et al. have alleged in their preliminary statement (see Paper Numbers 19, 60 and 183) that they first conceived of the invention of the counts on October 3, 1990, and that they began the active exercise of reasonable diligence towards an actual reduction to practice on October 3, 1990. Chen et al. have also alleged that they actually reduced to practice the subject matter of the counts on October 4, 1990.

Pursuant to 37 C.F.R. § 1.657(a), there is a rebuttable presumption that the inventors made their respective inventions in the chronological order of their effective filing dates. In their priority brief (Paper Number 279), Bouchard et al. have chosen to rest on the filing date of their French benefit application for their earliest date of invention. Accordingly, for Chen et al. to prevail in this proceeding they must establish by a preponderance of the evidence either (1) that they actually reduced to practice the subject matter of the counts before Bouchard et al.'s effective

filing date or (2) prove a conception of the subject matter of the counts before Bouchard et al.'s involved application's effective filing date, coupled with reasonable diligence just prior to Bouchard et al.'s effective filing date up to a reduction to practice (constructive or actual) by Chen et al. Jepson v. Egly, 231 F.2d 947, 950-51, 109 USPQ 354, 357 (CCPA 1956); Hull v. Davenport, 24 CCPA (Patents) 1194, 90 F.2d 103, 105, 33 USPQ 506, 508 (CCPA 1937); Wilson v. Sheets, 81 F.2d 755, 761-62, 28 USPQ 379, 385 (CCPA 1936).

In their brief, Chen et al. allege to have actually reduced to practice six compounds prior to December 9, 1992, the effective filing date of Bouchard et al.'s involved application. Chen et al. allege that each of the six compounds actually reduced to practice is a compound within the counts. Chen et al. also allege that they conceived of the subject matter of the counts prior to Bouchard et al.'s effective filing and were reasonably diligent from just prior to Bouchard et al.'s filing date up to the filing of their involved patent in this interference.

CHEN ET AL.'S BRIEF

Before we begin our analysis of Chen et al.'s case for priority we are compelled to make the following observation concerning Chen et al.'s priority brief. Chen et al.'s brief includes, as required by the rule, a statement of facts in numbered paragraphs. Most of the numbered paragraphs do recite facts which may be relevant to the issues to be decided. Many of the numbered

paragraphs, however, are expressions of conclusions of fact and law or are opinions without underlying support in the record. For example, in paragraph number 52 on pages 37 and 38 of their brief, Chen et al. state as a fact that Dr. Chen's original NMR for the sample described in his laboratory notebook 30347-025 (CX 20) "really produced a 1:1 mixture of 2'-O-benzyloxycarbonyl-7-α-fluorotaxol and 2'-O-benzyloxycarbonyl-7-deoxy-8-desmethyl-7,8-cyclopropataxol." This is not a fact but is precisely one of the elements Chen et al. must prove by a preponderance of the evidence in order to be declared the first inventors of the subject matter of the counts. See also paragraph numbers 69; 146; 184; 189; 190; 216; 224; and 427, for example.

Chen et al.'s brief also includes an argument section containing the contentions of Chen et al. with respect to the issue of priority as required by the rule. The section of the brief entitled "Argument" has scant reference to the specific underlying facts from the "Statement of Facts" section of the brief which support the arguments made therein. Thus, we agree with Bouchard et al.'s comment from page 1 of their brief that Chen et al. have forced this Board (and Bouchard et al.) to search the "Statement of Facts" section of their brief for the underlying basis for the legal conclusions Chen et al. would have us reach based on their argument. This not only places an undue burden on both this Board and Bouchard et al. but it unfairly places Bouchard et al. in the position of having to conjecture as to what forms the basis for the

various arguments and contentions made by their opponent. Thus, Chen et al.'s brief placed Bouchard et al. in the position of responding to Chen et al.'s various positions without actually knowing the underlying basis for many of Chen et al.'s arguments and positions. Suffice it to say it is virtually impossible to respond to a position taken where the underlying factual basis for the position is not known.

It does not serve Chen et al. to argue that they have referenced large portions of their statement of facts in their brief. For example, at pages 156 through 157 of their brief, Chen et al., in alluding to several alleged actual reductions to practice of the subject matter of the counts, direct this Board and Bouchard et al. to enormous sections of their statement of facts section of their brief without any specific references to particular facts which support allegations that the particular elements required to be proved to establish an actual reduction to practice were, more likely than not, actually performed. Suffice it to the say the rules require that the argument section include:

> the contentions of the party with respect to the issues it is raising for consideration at final hearing, and the reasons therefor, with citations to the cases statutes, other authorities, and parts of the record relied on. [Emphasis ours.]

Chen et al.'s brief does not satisfy this requirement of the rule.

Similarly, Chen et al.'s brief includes many conclusions concerning their case for priority without any reference to the underlying facts which support their conclusions. For example, at

page 157 of their brief, Chen et al. conclude:

> The evidence as a whole, including corroboration by more than a dozen non-inventors based on their independent knowledge, confirms the veracity of Chen's statements.

But because each actual reduction to practice alleged must be corroborated independently, Chen et al.'s oblique reference to the "evidence as a whole" and to "more than a dozen non-inventors" is legally inadequate. What person corroborated which alleged actual reduction to practice? Chen et al.'s brief does not tell us these facts. Further, because this interference has three separate counts defining three separate inventions and because each count sets forth the interfering subject matter in the so-called bifurcated or alternative format, it was Chen et al.'s burden to establish to this Board and to Bouchard et al. that each alleged reduction to practice was a reduction to practice of the subject matter of a particular alternative of a particular count.

While it may appear logical for Chen et al. to have presumed that their proofs would necessarily correspond to those alternatives in the count that describe the interfering subject matter in terms corresponding to the disclosure in their involved patent, a party may prove its priority case by showing a reduction to practice of compounds within their opponents' disclosure. Thus, it was necessary for Chen et al. to "read" the compounds they allege are actual reductions to practice of the subject matter for the various counts on the subject matter defined in the counts. For example, it was Chen et al.'s burden in alleging to have actually

reduced to practice a compound within Count 4 in this proceeding to show what the values were for the various substituents on the compound alleged to have been reduced to practice and which are described in the evidence and in at least one alternative of Count 4. For example, how does Chen et al.'s proof of preparing the compound **BMS-183821-01** satisfy the requirements for any compound defined by Count 4? Chen et al. have simply not explained how their proofs meet the requirements of the counts and, accordingly, have not met their burden of persuasion on this matter in their brief.

CHEN ET AL.'S CASE FOR PRIORITY

As correctly observed by Chen et al. in their brief, a chemical compound is actually reduced to practice when a compound meeting every limitation of the count is actually prepared and its utility demonstrated. As correctly observed by Bouchard et al. in their brief, absent adequate identification and appreciation by the inventor that a compound within the count has actually been prepared, there can be no actual reduction to practice.

Chen et al. argue that they actually reduced to practice compounds within each of the three counts before Bouchard et al.'s effective filing date of December 9, 1992. Nevertheless, each of the counts in this interference is in the bifurcated or alternative form. That is, each count recites two alternatives for the subject matter defined therein. Moreover, each alternative for each count sets forth either formulae with various substituents thereon which further define the subject matter (Counts 4 and 3A) or the

alternatives define a single, specific compound (Count 2). Chen et al. have utterly failed to explain in their brief how the evidence on which they rely as evidence of an actual reduction to practice of the subject matter of the counts "reads on" the specific limitations required by each of the counts. For example, what are the values of "R^1", "R^2", "R^3" and "R^4" in Chen et al.'s evidence that they actually reduced to practice a compound within the subject matter defined by Count 4?

Chen et al.'s brief does not direct us to the evidence which establishes how Dr. Chen identified any compound within the counts in the reaction mixtures he prepared. Neither does Chen et al.'s brief direct us to the evidence which shows how Dr. Chen separated any compound within any count from the reaction mixtures he prepared or even whether the samples he submitted were mixtures of compounds. According to Chen et al.'s involved patent, the product obtained by the reaction of DAST with certain taxol starting materials is a mixture of a 7-α-fluoro taxol derivative and a 7,8-cyclopropyl derivative (column 9, lines 41 through 47). No where in the evidence is there any showing describing how Dr. Chen resolved any such mixture into its component parts. While Dr. Chen's uncorroborated laboratory notebooks include sketches of what he has testified are representations of thin layer chromatography (TLC) plates showing the separation of starting material from product, these sketches do not identify the nature of the product let alone resolve the product into its component parts. The actual TLC plates

are not of record in this proceeding.

Recognizing that substantial portions of their "evidence" of actual reductions to practice shows that mixtures of fluoro epimers were obtained by reacting DAST with protected taxol not 7,8-cyclopropyl compounds as required by each count, Chen et al. invoke case law which is alleged to stand for the proposition that it does not lessen the value of Chen et al.'s evidence that they "misinterpreted" the tests and misidentified the compounds. Nonetheless, as correctly observed by Bouchard et al. in their brief, one element of any actual reduction to practice is an appreciation or recognition of the existence of an embodiment within the count. See pages 14 through 15 of Bouchard et al.'s brief. Dr. Chen's laboratory notebook referenced at page 163 of the brief as evidence that Dr. Chen knew by not later than December 2, 1992, that the mixture was not fluoro epimers of taxol ignores the fact the Dr. Chen signed the notebook at a date subsequent to Bouchard et al.'s effective filing date of December 9, 1992. By Dr. Chen's own testimony, he signed his notebook only after the experiment set forth on a notebook page was complete.

Chen et al. next attempt to rely on a line of cases interpreting the law of proving an actual reduction to practice which cases suggest that when the work relied on as an actual reduction to practice was performed in a so-called "organized research program" it has greater reliability than work not performed in such a program. Once again, Chen et al. have fallen

into the practice of citing diverse cases decided on particular facts distinct from the facts in this case and attempted to formulate from these cases a "bright line" rule of law which, according to Chen et al., mandates a finding that they have satisfied their burden of persuasion. However, as one of the predecessors to our reviewing court has observed:

> undue liberties should not be taken with court decisions, which should be construed in accordance with the precise issue before the court, and [that] a fertile source of error in patent law is misapplication of a sound legal principle established in one case to another case in which the facts are essentially different and the principle has no application whatsoever.

In re Ruscetta, 255 F.2d 687, 689, 118 USPQ 101, 103 (CCPA 1958).

Suffice it to say that the evidence in this proceeding to which we have been directed does not adequately establish the nature of the research program at Bristol-Myers Squibb let alone establish that it was so well-organized as to furnish additional reliability to the results obtained by Dr. Chen and his colleagues. For example, we have not been directed to any evidence which explains where Dr. Chen obtained his starting materials for his experiments. In at least one of the cases cited by Chen et al. there was evidence in the record that starting reactants were withdrawn from a source within the organization and the person (a non-inventor) who obtained the materials so-testified.

In this proceeding, we have not heard from any person in Bristol-Myers Squibb concerning what were the procedures set, if any, for withdrawing chemical reactants for experiments or for

maintaining and recording information in laboratory notebooks. Nor is there any evidence which establishes how data allegedly collected and stored on "magnetic tape" was archived. There has been no testimony concerning the "archived" data and whether the data so-collected and "archived" was accessible to others or even if records of "archived" data are maintained. At best, we know that there were numerous researchers at Bristol-Myers Squibb synthesizing various organic compounds, there was an analytical department and that there were at least quarterly meetings in the department in which Dr. Chen worked. We cannot but agree that Dr. Chen worked in an "organized program of research" but we cannot agree that that mandates a finding that Chen et al. have met their burden of persuasion. What is important and relevant to Chen et al.'s burden here is not whether or not there was an "organized research" program but what evidence was kept and does the evidence which was kept tend to show that it is more likely than not that Chen et al. actually reduced to practice compounds within the counts.

To summarize Bouchard et al.'s position on the issue of an actual reduction to practice, Bouchard et al. concede that Dr. Chen and his colleagues prepared numerous compounds but question whether the evidence on which Chen et al. rely establishes that Chen et al. ever adequately identified what they prepared as a compound within any of the counts. Bouchard et al. urge that Chen et al.'s identification of the products they prepared was so deficient as to

prevent Chen et al. from arguing the compounds they prepared were, indeed, compounds within any of the counts. Moreover, Bouchard et al. rely on Chen et al.'s initial determination that what they had prepared were mixtures of 7-fluoro epimers of taxol, as shown by the inclusion of procedures from CX 20 in their first filed application, as evidence which proves Chen et al. had no contemporaneous in time recognition or appreciation that they had prepared any compounds within the count before Bouchard et al.'s effective filing date.

We agree with Bouchard et al. that Chen et al. have failed to prove that a compound within any of the counts was actually prepared by Dr. Chen or any other researcher at Bristol-Myers Squibb on Dr. Chen's behalf prior to Bouchard et al.'s effective filing date. Chen et al.'s argument at pages 156 and 157 of their brief that Dr. Chen testified that he prepared compounds within the count prior to December 9, 1992, even if established by the evidence, is inadequate without corroboration. We find that Dr. Chen's testimony is inadequate in establishing that he prepared any compound within the count because the evidence does not establish adequate identification of any compound within any of the counts. In this instance, because of Chen et al.'s well-founded initial belief that they had prepared mixtures of fluoro epimers of taxol, it was essential for Chen et al. to establish that their subsequently developed evidence proved compounds within the counts had actually been prepared. This Chen et al. have not done.

Chen et al.'s arguments in their brief concerning: the skill of the persons who worked with Dr. Chen; Chen et al.'s pronouncement without any supporting evidence that Dr. Chen prepared compounds within the counts by methods intended to prepare said compounds; Chen et al.'s argument that the methods were reproducible; and Chen et al.'s argument that "structure confirmation analyses" confirmed that compounds within the counts were prepared, all are simply attorney argument made without specific reference to facts in the record which support the arguments. Argument does not take the place of probative objective evidence.

On pages 165 through 172 of their brief, Chen et al. urge as part of their alleged actual reductions to practice that they sufficiently tested compounds within the count for practical utility to satisfy that part of the legal requirements for proving an actual reduction to practice. Specifically, for compounds alleged to be compounds within Count 4 and Count 2, Chen et al. allege they demonstrated through two, art-recognized assays (tubulin polymerization assay and *in vitro* cytotoxicity assay), that the compounds tested had activity at least comparable to taxol and that such activity would have been indicative to a person of ordinary skill in the art that the compounds would exhibit pharmacological activity at least comparable to taxol. Additionally, Chen et al. argue that they demonstrated for at least

two compounds within the Counts 4 and 2, that the compounds exhibited significant anti-tumor activity in *in vivo* animal tests. With respect to compounds within Count 3a, the so-called baccatin intermediate, Chen et al. urge that the utility of compounds within Count 3A as intermediates for preparing compounds within Counts 4 and 2 was self-evident. Chen et al. urge that when they prepared a compound within Count 3A it was therefore unnecessary to prove any other practical utility for that compound.

Contrariwise, Bouchard et al. urge that to the extent Chen et al. actually tested compounds alleged to be compounds within the counts, all Chen et al.'s testing is inadequate to prove a practical utility. Bouchard et al. argue, *inter alia*, that all Chen et al.'s *in vitro* testing is inadequate because Chen et al. have failed to establish the necessary correlation between the results of the *in vitro* testing and the compounds' ability to kill or inhibit tumor growth in mammals. Although no count in this interference recites any utility, Bouchard et al. speak of "the intended functional setting for the taxol analogs of the counts" (page 17 of Bouchard et al.'s opposition brief, Paper Number 288). As evidence in support of this argument, Bouchard et al. cite to the testimony of Drs. Vayas and Kadow who testified that small structural changes to the taxol molecule can result in analogs whose antitumor efficacy differs substantially from taxol's efficacy. See page 18 of Paper Number 288. Bouchard et al. also

argue that because Chen et al.'s testing was a test of a mixture of compounds, one of which (the 7-α-fluoro taxol derivative) was known to possess tumor inhibiting properties itself, that Chen et al.'s results cannot, necessarily, be attributed to the 7,8-cyclopropyl taxol derivative. See pages 27 and 28 of Paper Number 288. Bouchard et al., relying on Chen et al.'s own witness, attack the sufficiency of the *in vivo* testing as being based on an inadequate number of tumor models (see page 30 of Paper Number 288).

Again, none of Chen et al.'s arguments on the matter of utility are supported by specific references to the record but include only oblique, generic references to large portions of the record which are little more than invitations to us to read the record and find portions which may support the argument proffered. Again, Chen et al. have also failed to read the compounds actually tested on the requirements for each substituent in any alternative of either Count 4 or Count 2. Accordingly, we find it unnecessary to address what is the type of testing required to establish practical utility for any of the compounds allegedly tested. There is no specific probative objective evidence referenced in Chen et al.'s arguments which proves that Chen et al. tested any compound which was sufficiently, contemporaneously identified and recognized as a compound within the counts. Stated another way, Chen et al. cannot rely on test results for compounds that have not been established as compounds which satisfy all the limitations of the

counts for the purpose of proving the compounds had a specific utility. We agree with the position taken by Bouchard et al. that because the law requires, as part of the proof of an actual reduction to practice, recognition of successful testing prior to Bouchard et al.'s effective filing date, Chen et al. have failed to adequately prove utility for any compound within any of the counts because what was tested was not adequately identified.

Chen et al. also recognize that any evidence of an actual reduction to practice must be corroborated. However, except for Chen et al.'s pronouncement that their proofs bring this case within the penumbra of cases which pronounce a "rule of reason" must be applied to the evidence which establishes corroboration, there is little or no specific reference in Chen et al.'s brief to what specific acts by what non-inventors constitute evidence of corroboration independent of any knowledge derived from the inventors.

Just as proofs of an actual reduction to practice must show that every element of the count was actually reduced to practice, a party's evidence of corroboration must corroborate each of the prerequisites for an actual reduction to practice. It is by now well-settled that an inventor must provide independent corroborating evidence in addition to his own statements and documents. Lacotte v. Thomas, 758 F.2d 611, 613, 225 USPQ 633, 634 (Fed. Cir. 1985). The evidence establishing corroboration "may consist of testimony of a witness, other than an inventor, to the

actual reduction to practice or it may consist of evidence of surrounding facts and circumstances independent of information received from the inventor." Reese v. Hurst, 661 F.2d 1222, 1225, 211 USPQ 936, 940 (CCPA 1981) (emphasis ours).

The evidence necessary for corroboration is determined by the so-called "rule of reason" which involves an examination, analysis and evaluation of the record as a whole to the end that a reasoned determination as to the credibility of the inventor's story may be reached. Berges v. Gottstein, 618 F.2d 771, 205 USPQ 691 (CCPA 1980); Mann v. Werner, 347 F.2d 636, 146 USPQ 199 (CCPA 1965). It has been recognized that whether an actual reduction to practice has been corroborated must be decided on the facts of each particular case. Berges v. Gottstein 618 F.2d at 776, 205 USPQ at 695. Nonetheless, adoption of the "rule of reason" has not dispensed with the requirement that corroborative evidence must not depend solely from the inventor himself but must be independent of information received from the inventor. Reese v. Hurst, *id.*, Mikus v. Wachtel, 542 F.2d 1157, 1159, 191 USPQ 571, 573 (CCPA 1976).

Chen et al. attempt to create a trail from Dr. Chen's laboratory to the analytical section at Bristol-Myers Squibb for the purpose of bringing this case under the holding of the line of cases invoking the so-called "rule of reason" for determining whether or not an actual reduction to practice has been corroborated. But, much of the evidence of the analysis of the

compounds prepared by Dr. Chen and which he believed at the time he synthesized them to be mixtures of fluoro epimers of taxol and on which Chen et al. now rely evidences the problem with Chen et al.'s evidence of corroboration. The researchers in the Bristol-Myers Squibb analytical department, accepting Dr. Chen's original representations that he had prepared mixed fluoro epimers of taxol, "confirmed" that Dr. Chen had, indeed, prepared mixtures of fluoro epimers of taxol! Chen et al. now ask us to disregard those findings based on subsequent determinations made on dates subsequent to Bouchard et al.'s effective filing date and based on evidence of "re-plotted" data and find that Chen et al.'s evidence of an actual reduction to practice is adequately corroborated.

There is neither evidence contemporaneous in time with Dr. Chen's notebook entries nor evidence independent of any of the inventors (Chen and Farina) which corroborates Dr. Chen's testimony concerning the alleged actual reductions to practice. Chen et al.'s evidence does establish that samples of compounds prepared by Dr. Chen were forwarded to the analytical section of Bristol-Myers Squibb's laboratory in Wallingford, Connecticut, by Dr. Chen for analysis. But in each instance Dr. Chen provided the analytical section with a structural formula of the compound he believed he had prepared.

Dr. Chen did not give the analytical section an unknown sample and request a determination of its structure by the analytical section. Thus, the analytical section's alleged "confirmation" of

the structure provided to them by Chen cannot establish, independently of Dr. Chen's proposed formula, what was the identity of the compound produced because Dr. Chen provided them with the structure he believed the compound possessed in advance. Frilette v. Kimberlin, 412 F.2d 1390, 1398, 162 USPQ 148, 155 (CCPA 1969). Moreover, based on the testimony of Bouchard et al.'s witnesses (Drs. Nicolau and Parker), the spectra said to "confirm" the structure of the compounds as compounds within the counts are capable of more than one reasonable interpretation. Indeed, Chen et al.'s early "confirmation" of the compounds as mixtures of fluorine epimers of taxol is evidence that the NMR spectra are capable of more than one reasonable interpretation. Additionally, Chen et al.'s own witnesses (Ms. Huang, Dr. Kant) testified that the NMR alone was inadequate for confirming the structure. See CR 664-65; CR 2169, respectively. Coupled with Chen et al.'s unequivocal original determination that the compound prepared was a "mixture" of fluoro epimers of taxol, Chen et al. have failed to prove corroboration by a preponderance of the evidence.

Chen et al. have not provided any witness who observed Dr. Chen's syntheses or even the persons who allegedly witnessed his laboratory notebooks. While corroboration does not have to entail an actual witnessing of the reduction to practice by a person who understands what is going on, even under the "rule of reason" line of cases there is a requirement for some corroboration independent of the inventors. Hahn v. Wong, 892 F.2d 1028, 1035, 13 USPQ2d

1313, 1319 (Fed. Cir. 1989). We find no such independent evidence in the Chen et al. record.

Chen et al. allege throughout their brief that Dr. Farina, one of the two named inventors of Chen et al.'s involved patent, made suggestions to Dr. Chen or asked Dr. Chen to make certain modifications to the taxol molecule for purposes of investigation. Nevertheless, Dr. Farina, who apparently no longer works for Bristol-Myers Squibb, has never testified in this proceeding and all the references to his suggestions or recommendations to Dr. Chen are references to Dr. Chen's testimony. That is, the references are testimony from Dr. Chen concerning what Dr. Farina is alleged to have stated to Dr. Chen some many years ago when Dr. Chen performed the lab work on which Chen et al. rely. The record also establishes that Dr. Chen's recall of events from the relevant time period is not great (CR 1598, lines 5 through 9; CR 1599, lines 7 through 11). Thus, Dr. Chen's testimony about what Dr. Farina told him is uncorroborated and not supported by any other evidence <u>independent</u> of Dr. Chen in this record. Further, Dr. Farina is a co-inventor and his testimony, if given, would therefore also require corroboration.

More significantly, however, is the fact that other than Dr. Chen's writings from his notebook and Dr. Chen's testimony, there is no evidence proffered by Chen et al. <u>independent of Dr. Chen</u> which supports Chen et al.'s allegation that any compounds within the counts were ever actually reduced to practice. While an

inventor's writings in his laboratory notebook may, with proper corroboration, serve as evidence of a conception of the subject matter of the count, they are never adequate, standing alone, to serve as an actual reduction to practice. Hahn v. Wong, 892 F.2d at 1032-33, 13 USPQ2d at 1317-18.

The witness' signature on Dr. Chen's various notebook pages under the space marked "WITNESSED" and "DATE" at best may establish only that those pages existed on the date they were witnessed. See Hahn v. Wong, 892 F.2d at 1033, 13 USPQ2d at 1317. It cannot be gainsaid that signing a blank marked "WITNESSED" on a laboratory notebook page evidences what, on the date signed, the person "WITNESSING" the notebook actually witnessed. Rather, what was read and understood at the time the notebook page was signed can only be determined from the testimony of the persons involved and other, contemporaneous in time, evidence. But no witness who signed any of Dr. Chen's notebooks (or any other researcher's laboratory notebook) has ever testified in this proceeding!

According to Dr. Chen's testimony, it was his practice to write at the top of his notebook, after he entered the date he began an experiment, an outline of the experiment he was to perform in terms of the reaction procedures he would use to synthesize the proposed compound. See CR 50 ("I ordinarily recorded the structure of the starting material, and if known, the structure of the product expected from the reaction."). Thus, we consider Dr. Chen's notebook to be outlines of work he performed with an

expressed objective set forth in the nature of the chemical reaction he set forth, including a proposed final product. Absent any positive, corroborated identification of what was actually prepared, we decline to accept the reaction scheme and the proposed product set forth in the notebook pages as proof that the proposed products were actually prepared. Rather, they are a statement by Dr. Chen of his objective in performing the particular experiment set forth on any particular notebook page.

In Alpert v. Slatin, 305 F.2d 891, 895-96, 134 USPQ 296, 300 (CCPA 1962), the court, in discussing whether or not reports of scientific research and testing were subject to the "shop book" rule of 28 U.S.C. § 1732, characterized reports of the inventors to their superiors about the work the inventors allegedly performed as being:

> no more than the usual inventor's work or progress reports which the decisions of this court have held cannot be relied on to establish reduction to practice since they are not independent corroboration of an inventor's testimony. (citations omitted)

In the commentary to the final rules published in the Federal Register on December 12, 1984, the Patent and Trademark Office, in commenting on the adoption of the Federal Rules of Evidence, observed that:

> The courts have articulated a rule of law which the PTO will continue to apply in determining admissibility of laboratory note books under the "shop book" Rule 803(b)(6) of the Federal Rules of Evidence. See e.g., Alpert v. Slatin, 305 F.2d 891, 134 USPQ 296 (CCPA 1962) ....

See the Notice of Final Rule, Federal Register, Volume 49, Number

240, December 12, 1984, at page 48447. Here, because Dr. Chen has testified about the notebooks they are not inadmissible hearsay but they are not, absent corroboration, entitled to significant weight. Accordingly, Dr. Chen's laboratory notebooks alone may not be relied on to prove that any compound within any of the counts was actually prepared.

Chen et al. focus on the experience of Dr. Chen's co-workers as evidence of the reliability of their testimony in corroborating Dr. Chen's alleged actual reductions to practice of compounds within the counts. Nevertheless, it is the corroborating witness' knowledge independent of the inventor which is essential to corroboration. Here, the Bristol-Myers Squibb employees who received samples from Dr. Chen for testing had no independent knowledge of Dr. Chen's research or the particular experiments he performed to allegedly produce compounds within the counts. Rather, Dr. Chen requested various analyses of his samples by filling in forms and furnishing the analytical group with a proposed structural formula, molecular weight and empirical formula for the sample. Sometime after the form submission, Dr. Chen would furnish the sample to be tested and, except for the sample number assigned to the sample, the various Bristol-Myers Squibb employees had no independent knowledge of what the sample was or how it was synthesized. Indeed, the employees could not have determined from mere inspection of the sample what was its nature or how it was synthesized. For many of the samples, at the time in question Dr.

Chen believed he had prepared mixtures of fluoro epimers of taxol and the Bristol-Myers Squibb employees in the analytical department "confirmed" Dr. Chen's belief based on his proposed structure for the compounds he submitted.

Accordingly, Chen et al.'s "proofs" do not establish that any compound defined by any of the counts was actually prepared prior to Bouchard et al.'s effective filing date because the "proofs" do not adequately identify any particular compound which reads on any compound within any count. To the extent Chen et al. have proffered probative objective evidence in support of their case for priority we find that the evidence lacks adequate corroboration by any non-inventor. While Chen et al. tested various materials for utility, none of the materials tested was adequately identified as a compound within any of the counts. For all the above noted reasons, we conclude that Chen et al. have failed to prove an actual reduction to practice of any compound within any of the counts in this interference.

CHEN ET AL.'S CONCEPTION PLUS DILIGENCE THEORY

In their brief, from pages 173 through 177, Chen et al. urge that even though they have proven an actual reduction to practice of the subject matter of the counts prior to December 9, 1992, Chen et al. should also be declared the first inventor of the subject matter of the counts because they conceived of the invention of the counts before Bouchard et al.'s effective filing date and were reasonably diligent in reducing to practice the subject matter of

the counts from just prior to Bouchard et al.'s effective filing date up to the filing on March 11, 1993, of the application which matured into their involved patent in this proceeding.

There is an even greater paucity of detail with respect to the underlying facts which allegedly support Chen et al.'s theory advanced in their brief on this issue than the section of their brief setting forth the grounds for an alleged actual reduction to practice. The evidence of conception to which we are directed in the brief is found on page 173 and is set forth as:

> See, e.g., Statement of Facts, infra, ¶¶ 1-19, 178-180 (See also ¶¶ 20-177, 181-456).

The reference to the "facts" is made without regard to the fact that the three separate counts in this interference define separate inventions. Once again, Chen et al. have ignored the fact that it is they who have the burden of persuasion and instead have directed us to enormous portions of their statement of "facts" and invited us to search the facts and find the facts which may support the position taken by them. This we will not do.

Chen et al.'s reliance on the Patent Application Proposal of October 23, 1992 (CX 89) as evidence of conception of the subject matter of the three counts in this proceeding is legally inadequate because Chen et al. have failed to explain how the document on which they rely describes the subject matter of any of the three counts in this proceeding. Additionally, the "proposal" was: "Prepared by" Dr. Farina, a named inventor who has not testified;

"approved" by a person with the title "Preclinical Clinical Director" who has not testified; and signed by a person denominated as "Department Head" who has not testified. Dr. Chen's attached notebook page 30526-043 is "witnessed" by a person who has not testified. Accordingly, CX 89 lacks any adequate corroboration and because every element of conception must be corroborated[10], Chen et al. have no evidence which proves "the formation, in the mind of the inventor of a definite and permanent idea of the complete and operative invention, as it is thereafter to be applied in practice." Coleman, 754 F.2d at 359, 224 USPQ at 862.

The section of Chen et al.'s brief devoted to the "reasonable diligence" aspect of their priority case is little more than various conclusions made without regard to any underlying facts which support the conclusions made by Chen et al. For example, at page 174 of their brief, Chen et al. conclude that:

> The record also shows that Chen meets the second criterion, that reasonable diligence was exercised by Chen from a time prior to December 9, 1992, to a later actual or constructive reduction to practice. In particular, Chen was actively prosecuting the Chen parent applications from prior to December 9, 1992, up through the March 11, 1993, filing date of the Chen patent claiming priority under 35 U.S.C. § 120 to the Chen parent applications. That filing is, by definition, a constructive reduction to practice of the counts.

Glaring by its absence from the above cited passage is any reference to the "record" or any part of the statement of facts from pages 24 through 150 of Chen et al.'s brief which supports

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[10] Coleman v. Dines, 754 F.2d 353, 359-60, 224 USPQ 857, 862 (Fed. Cir. 1985).

Chen et al.'s conclusion. We observe that the only activity in Chen et al.'s first filed application, directed to mixed 7-fluoro epimer derivatives of taxol, which mentions in part the subject matter of the counts in this proceeding was Chen et al.'s petition to withdraw the application from issue filed on January 19, 1993. That petition, was filed subsequent to Bouchard et al.'s effective filing date and therefor cannot be relied on to prove reasonable diligence from just prior to Bouchard et al.'s filing date up to a reduction to practice.

Chen et al. have attempted to rely on case law in their brief, decided on other facts, distinct from the facts here, in an attempt to fill in the evidentiary gaps in their proofs. In Bey v. Kollonitsch, 806 F.2d 1024, 231 USPQ 967 (Fed. Cir. 1986), there was substantial, corroborated, unrebutted evidence which established reasonable diligence. Specifically, the court observed concerning the work performed by Hattan, the attorney prosecuting the "related applications" that:

> The record of Hattan's work on the related cases during the 41-day critical period contains unrebutted evidence of reasonable diligence. There is corroborated evidence of specific work performed on the related applications on almost every working day in the critical period to support Hattan's testimony that she worked continuously on the applications during this period. (emphasis ours)

Bey, 806 F.2d at 1030, 231 USPQ at 972. Here the "critical period" runs from December 8, 1992 (just prior to December 9, 1992), to March 13, 1993, a 95-day period. There is absolutely no evidence of who worked on what applications on which days for any day in the

critical period. Indeed, Mr. Han, the person alleged by Chen et al. to have been charged with the responsibility of prosecuting the applications in question, has not testified!

Accordingly, we find that Chen et al.'s brief fails to prove that it is more likely than not that Chen et al. actually reduced to practice any compound within any of the counts in this interference prior to Bouchard et al.'s effective filing date of December 9, 1992. Additionally, we find that Chen et al.'s brief fails to prove that Chen et al. conceived of any compound within any of the counts in this interference before Bouchard et al.'s effective filing date of December 9, 1992, and fails to prove that Chen et al. were reasonably diligent from just prior to Bouchard et al.'s effective filing date up to a reduction to practice, actual or constructive, of the subject matter of any count in this interference.

Although we have held that Chen et al. failed in their brief to meet their burden of persuasion in this proceeding, in an abundance of caution we have undertaken to review the record for the purpose of finding the underlying facts which support Chen et al.'s argued position from their brief that they actually reduced to practice six compounds within the counts, specifically, **BMS-46546**; **XXXVa**; **BMS-182902-01**; **BMS-183582-01**; **BMS-183583**; and, **BMS-183821-01**. For reasons set forth fully below, even considering the facts most favorably to Chen et al., Chen et al.'s argued position for being declared the first inventor of the subject matter of the

counts is legally inadequate based on the record before us.

Dr. Chen's November memorandum to Drs. Vyas and Farina (CX 17), is directed to 7-fluoro derivatives not the cyclopropyl compounds of the count. More significantly, as a memorandum written by Dr. Chen, one of the named inventors, it cannot be considered as evidence independent of the inventor and cannot, therefore, be relied on as evidence of corroboration.

Dr. Chen's notebook pages CX 18 and CX 19 which are relied on as evidence of Dr. Chen's first experiments preparing compounds alleged to be within the counts are directed to the preparation of 7-fluoro derivatives of taxol not cyclopropyl derivatives as required by the count. Additionally, CX 18 has an illegible signature of a person alleged to have "witnessed" Dr. Chen's notebook. Similarly, CX 19 has an illegible signature of a person alleged to have "witnessed" Dr. Chen's notebook more than one month after the date on which Dr. Chen completed the experiment set forth on page 015 of Notebook Number 30347. Although Dr. Chen has testified that he performed an NMR analyses on the reaction product and determined that the "major product" had been obtained in a 50% yield, there is no indication anywhere on either CX 18 or CX 19 which shows any NMR analyses had been performed by Dr. Chen or explains how Dr. Chen separated the reaction products and determined the yield. No witness who allegedly signed the notebook pages has testified.

In CX 20, the synthesis of 7-fluoro derivatives of protected

taxol is described. These compounds are not compounds within any of the counts. According to the date at the top of the page and Dr. Chen's testimony concerning his ordinary practice of making entries in his notebooks, the experiment was started on October 8, 1990, the date at the top of notebook page 025, and was completed by Dr. Chen on November 1, 1990, the date on which Dr. Chen signed the bottom of notebook page 025. Again an illegible signature of a person alleged to have witnessed Dr. Chen's notebook is found at the bottom of the page. The date of the "witnessing" is September 6, 1995, almost five years after the work by Dr. Chen was described on page number 025 and about one month before the declaration of this interference. The person who "witnessed" the notebook has not testified. According to Dr. Chen's testimony, this experiment is included as Example 2 in the involved Chen et al. patent.

According to Chen et al., Dr. Chen personally performed NMR spectroscopy on the sample he obtained as described in CX 20 and that spectrum is CX 21. Nevertheless, we observe that there is no identification on the spectrum which is CX 21 which positively identifies the compound analyzed as the compound prepared in CX 20. Moreover, there is no corroboration of either CX 20 or CX 21.

BMS-46546

Chen et al. allege that in October 1990, Dr. Chen prepared a compound as allegedly shown in his laboratory notebook 30347-066 (CX 23) by deprotecting the product he allegedly prepared earlier and recorded in his laboratory notebook 30347-065 (CX 22). The

Compound Control Department at Bristol assigned the control number "BMS-46546" to a sample submitted by Drs. Chen and Farina in November 1990 (CR 48, ¶93). Drs. Chen and Farina submitted the sample together with a form in which they supplied in the lower part of the form (Part 2), *inter alia*, the following information: a proposed structure; date of submission; a batch number corresponding to Chen's notebook page 30347-066; a proposed empirical formula; the weight of the sample; identification of the sample as a taxol derivative which was a 1:1 mixture of epimeric fluorides at C_7 and, a proposed utility ("Antitumor Agent"). Linda Kissel, a Bristol-Myers Squibb employee in the Compound Control Department, filled out the top part of the form (Part 1), including the formula and molecular weight as determined by a computer and based on the proposed structure furnished by Drs. Chen and Farina.

After the sample and the form were submitted, Dr. Mamber performed a tubulin polymerization assay on BMS-46546. Based on the test results for the compounds Dr. Mamber testified that he informed Drs. Chen and Farina of the results (CR 125, line 16 through CR 126, line 12; CX 172). Dr. Mamber retested BMS-46546 two more times in November 1990 using the same procedure which tests confirmed his earlier results (CR 126). Dr. Chen included the results of the testing in the Quarterly Report he prepared for Dr. Vayas (CX 17). Dr. Mamber did not testify as to the identity of the sample he tested other than stating that it was the sample he

received from Drs. Chen and Farina.

In November 1990, BMS-46546 was also tested for *in vitro* cytotoxicity (**CR** 132,134). The results of the testing were comparable to the results for the taxol control also tested along with the sample of BMS-46546 (CR 136). The results were provided to Dr. Chen and Dr. Chen included the results in his report to Dr. Vyas (**CX** 34).

In January 1991, Dr. Chen allegedly prepared a second sample of the compound known as BMS-46546 as allegedly shown in Dr. Chen's laboratory notebook number 30449 at page 016 (**CX** 29). The experiment on said notebook page was started on January 1, 1991 and completed on February 1, 1991. According to Dr. Chen's notebook page, 29 milligrams "pdt." in 85% yield was obtained. The product is defined only as "C_7-F Taxol." Under the heading "WITNESSED" at the bottom left hand side of the page an illegible signature is found along with a date which appears to be October 2, 1995, more than 4 (four) years after the experiment had been completed. No person who "witnessed" the notebook has testified in this proceeding.

Chen et al. allege that Drs. Chen and Farina submitted 45 milligrams of said sample, 16 milligrams more sample than prepared on February 1, 1991, to the Compound Control Department on January 15, 1991, before February 1, 1991, the alleged date on which Dr. Chen completed the experiment preparing said compound. Dr. Chen

filled out a compound submission form indicating, *inter alia*: the date submitted (January 15, 1991); the batch number (30449-016); a proposed empirical formula; a molecular weight; the amount of sample; a proposed structural formula; and, a proposed utility (Antitumor Agent). The compounds were tested *in vivo* for antitumor activity and by not later than August 1991, Dr. Chen learned from the Bristol-Myers Squibb computer system that BMS-46546 had antitumor activity. The results of the testing were included in Dr. Farina's November 1991 memorandum (**CX** 35).

Assuming for the sake of argument that all Chen et al.'s evidence is authenticated, admissible, probative and corroborated as is necessary, mere inspection of all the evidence on which Chen et al. rely, at the time BMS-46546 was prepared reveals that it was understood by Drs. Chen and Farina to be a 1:1 mixture of C_7-fluoro-epimers of taxol not cyclopropyl derivatives as described and required by all the counts in this interference. Indeed, as we observed in our decision on the parties' preliminary motions, because DAST was known to be a fluorinating agent at the time Dr. Chen selected it for reaction with taxol, it was reasonable to expect that the product obtained by reacting taxol with DAST would have been a mixture of fluoro derivatives. Nothing in Chen et al.'s evidence contemporaneous in time with their experimental efforts proves otherwise.

Nevertheless, Chen et al.'s evidence is not persuasive because

of other serious shortcomings. Chen et al. rely on Dr. Chen's various notebooks as the underpinning of the evidence on which they rely in support of their case for priority. But the notebooks, at best, serve as evidence of conception and as Dr. Chen is an inventor, corroboration of his notebooks is required. No person alleged to have witnessed any of Dr. Chen's notebooks has testified in this proceeding. Moreover, virtually all witnessing of Dr. Chen's notebooks was made at date subsequent to his completion of the work represented in the laboratory notebooks, sometimes years after the work was allegedly completed.

XXXVa

Sometime in October 1991, Dr. Chen alleges that he removed the taxol side-chain from BMY-46546, leaving the so-called taxol core (see: page 27, paragraphs 11 and 12; page 28, paragraph 13; and page 72, paragraphs 181 and 182 of Chen et al.'s brief). Dr. Chen testified that he recorded the procedure for removing the side-chain in one of his laboratory notebooks (**CR** 63; **CX** 37). Drs. Chen and Farina understood that Dr. Chen had prepared a mixture of fluorine epimers of the so-called baccatin III derivatives of BMS-46546 (see page 72, paragraph 182 of Chen et al.'s brief). According to Dr. Chen's uncorroborated testimony, Drs. Chen and Farina "later learned" that Dr. Chen's procedure for removing the side-chain from BMS-46546 actually resulted in a mixture of 7,8-cyclopropyl and 7-α-fluoro baccatin III derivatives, although the basis for this conclusion is not set forth in the brief.

In October 1991, Dr. Chen asked Dr. Kant to attach a Taxotere[11] side-chain to the 7-fluoro epimer baccatin III derivatives he earlier prepared. Dr. Kant allegedly prepared the compounds in November 1991 and recorded them in his laboratory notebook number 32108 (**CX** 38; **CX** 39). Dr. Kant understood that he had prepared 7-fluoro derivatives of the baccatin III derivatives earlier prepared by Dr. Chen based on the information provided to him by Dr. Chen (**CR** 2141-42, 2162, 2175, 2181, 2191, 2193; **CX** 40).

Thus, **CX** 37 is directed to compounds not within any of the counts. Moreover, at the time the compounds shown therein were synthesized Drs. Chen and Farina believed the compounds to be mixed fluorine epimers of taxol. Similarly, **CX** 38 and 39 represent mixed fluoro baccatin compounds not compounds within any of the counts.

In August 1992, Dr. Chen alleges that he prepared 7-deoxy-8-desmethyl-7,8-cyclopropyl baccatin III by the procedure outlined in his laboratory notebook number 33450 (**CX** 87). Dr. Chen's notebook was signed by Marc A. Bruce, a person who has not testified in this proceeding, on November 24, 1992, next to the caption "WITNESSED AND UNDERSTOOD BY:". The notebook indicates that Dr. Chen began with 30 milligrams of starting reactant; 15 milligrams of tetrabutyl ammonium borohydride and 1 milliliter of dichloro methane. In late August 1992, Dr. Golik, a Bristol-Myers Squibb employee received a 30.5 milligram sample of a compound identified

[11] Taxotere is the tradename for the Rhone-Poulenc Rorer Taxol analog bearing a different side-chain than Taxol. CR62.

to him by Dr. Chen as 7-deoxy-8-desmethyl-7,8-cyclopropylbaccatin III (CR 146; CX 211). Dr. Golik testified that Dr. Chen explained to him that Dr. Chen had prepared the sample by "treating 7-deoxy-desmethyl-7,8-cyclopropyltaxol with tetrabutylammonium borohydride" (CR 147). Dr. Golik wrote the reaction Dr. Chen explained to him for preparing the compound in his laboratory notebook number 30614, page number 094. Thus, Dr. Golik's knowledge was not independent but obtained directly from Dr. Chen, an inventor.

In late August 1992, Dr. Golik transferred a recrystallized sample of the compound given to him by Dr. Chen to Dr. Gao with a request for x-ray diffraction analysis (CR 148; CX 212). The request form included the structure for the compound as proposed by Dr. Chen. Dr. Gao performed an x-ray diffraction experiment on the sample in early September 1992. According to Dr. Gao's testimony, after her mixed results experimenting to find a suitable solvent for crystallizing the compound, she "solved" the structure on September 8, 1992, of the compound submitted by Dr. Golik from data generated in her experiment on September 4, 1992 (CR 163). According to her testimony, Dr. Gao "confirmed that the proposed structure was correct." *Id.* The proposed structure was the structure which Dr. Chen had previously furnished to Dr. Golik. Dr. Gao wrote up her findings and included them in her Fourth Quarter Report (CX 247). Dr. Golik also reported the results in his quarterly report to Drs. Farina and Vayas in November 1991 (CX 88).

The work allegedly performed by Dr. Chen in August 1992 is entirely uncorroborated. Further, all the work of Drs. Golik and Gao "confirming" the identity of the samples allegedly prepared by Dr. Chen was based entirely on information Dr. Chen provided them with respect to the compounds structure and identity. Thus, none of the testimony by Drs. Golik and Gao or their work "identifying" the samples given to them by Dr. Chen can be considered to be corroboration independent of the inventors.

BMS-182902-01

In November 1991, Dr. Kant, at the request of Dr. Chen, attached the Taxotere side-chain to the mixture of the 7-fluoro epimers of baccatin III he had prepared and recorded in his notebook number 32242. Dr. Kant recorded the procedure he used to prepare the compounds in his laboratory notebook (CX 38; CX 39). Dr. Kant signed his notebook pages in April 1994. Under the heading "WITNESSED AND UNDERSTOOD BY" at the bottom right hand side of the notebook page there is an illegible signature and a date which appears to be either April ("4") or September ("9") 1994. As with all Chen et al.'s proffered notebook pages, the witness of Dr. Kant's notebook pages has not testified in this proceeding. The product depicted in each of Dr. Kant's notebooks is a mixture of 7-fluoro taxol derivatives not compounds within any of the counts. The compound shown on page 113 prepared by Dr. Kant was the protected taxol derivative not a compound within any of the counts. The NMR analysis performed by Dr. Kant was on the protected

derivative. The protected derivative is alleged to correspond to Example 22 of Chen et al.'s involved patent. Dr. Kant also allegedly performed an NMR analysis on the product shown on page 115 (CX 39) and described on the NMR spectrum as "7-fluor-10-acetyl analog of Taxotere/CDCL3" (CX 41).

In early November 1991, Dr. Kant submitted a sample of the deprotected Taxotere derivative to the Compound Control Department for testing. The submission form completed in part by Dr. Kant described the compound as "7-fluoro-10-acetyl-taxotere" and depicted the sample as an epimeric mixture of fluoro isomers (CX 42). The product was further described as a "white foam" and Dr. Kant provided a proposed formula, structure and molecular weight for the compound. The Compound Control Department assigned the sample the Bristol-Myers Squibb identification number **BMS-18902-01** (CR 180). The compound was tested in the tubulin polymerization assay by Dr. Mamber in November 1991. By December 1991, Dr. Mamber informed Drs. Farina, Chen and Kant of the results of his testing (CR 128). The results of further testing were forwarded to Dr. Chen and Farina in December 1991 (CR 139). In December 1991, *in vivo* testing of **BMS-182902-01** began and the results were obtained by late April 1992 (CR 158).

Thus, none of the compounds prepared by Dr. Kant were compounds within the counts but were instead mixed fluorine derivatives of baccatin III. Because Dr. Kant is not an inventor

his testimony need not be corroborated. Nevertheless, the witness to his notebook signed the notebook page some 3 and a half years after the work was performed and the witness has never testified. We find this is exemplary of the cavalier regard given to witnessing notebooks at Bristol-Myer Squibb during the relevant time period.

BMS-183582-01

Dr. Chen discussed biologically inactive ring contracted cyclopropyl derivatives he allegedly prepared in his Quarterly Report in August 1991 (**CX** 43). In late November 1991, Dr. Chen prepared a compound by reacting DAST with a 10 and 2' protected 7-epi-taxol (**CX** 44). The protected epi-taxol compound was prepared according to the procedure in Dr. Chen's laboratory notebook number 32242, pages 089 and 127 (**CX** 45; **CX** 46). Although there is no testimony explaining how the three compounds were separated and identified, according to Dr. Chen's uncorroborated testimony he performed an NMR analysis for the products he identified in his notebook as the second and third products. Spectra bearing the identification number 32242-191-2 and 32242-191-3 are **CX** 47 and **CX** 48, respectively. According to Dr. Chen, he submitted a sample of the "first reaction product" to Ms. Huang for NMR analysis. According to Ms. Huang's testimony, she performed the requested NMR analysis on November 4 and 5, 1991 (**CX** 49). The spectrum obtained is captioned on the top of the spectrum as "CHEN 32242-191-1 CDCL3 12/4/91." Nevertheless, **CX** 49 bears a date of "26-3-93", that is,

March 26, 1993. Additionally, there are numerous handwritten notations on the various peaks of the spectrum and a formula at the top of the spectrum which bear no date. Thus, it appears that CX 49 is not the original spectrum but a so-called "re-plot", made in March 1993, of the data allegedly generated in December 1991. But we cannot determine how the handwritten notes appeared on a "re-plot." There has been no testimony which evidences that the Bristol-Myers Squibb computer system was capable of storing notes printed by hand on the original NMR printout. Thus, the reliability of this "re-plotted" data is in question.

According to Dr. Chen's uncorroborated testimony, in December 1991, he subsequently deprotected the 7-epi-taxol derivative he had earlier prepared. Dr. Chen recorded the preparation of the deprotected compound in his laboratory notebook number 32044 at page 010 (CX 54). According to Dr. Chen's uncorroborated testimony, he ran an NMR spectrum for the compound prepared in CX 54 (CX 56). Thereafter, Dr. Chen gave both his own NMR spectrum, including a depiction of the proposed structural formula, and a sample to Ms. Huang for purposes of performing NMR analysis on said sample (CX 98; CR 642, 643). Ms. Huang obtained an NMR spectrum which she initialed and dated on 12/17/91 (CX 57). The exhibit is captioned at the top of the page "CHEN 32044-010 12/16/91." Nevertheless, the date on the right hand side of the spectrum is "13-5-93" or May 13, 1993. Chen et al. have not even addressed let alone explained this discrepancy. Dr. Chen testified that the NMR machines used at

Bristol-Myers Squibb did not generate the handwritten notes (CR 577-78; CR 580, lines 2-8; CR 583, lines 2-5; CR 584, lines 3-13; CR 594, line 16 through CR 595, line 6).

A sample of the compound was submitted by Dr. Chen to the Compound Control Department in January 1992. Ms.Kissel assigned the sample the Bristol-Myers Squibb compound number BMS-183582-01 (CX 60). The sample was determined to have the ability to polymerize and stabilize tubulin (CR 128; CX 182, 183). The sample was also determined to have *in vitro* cytotoxicity against certain cancer cells (CR 141; CX 203). The results were provided to Dr. Chen who then provided them to Dr. Farina.

Ms. Huang's conclusion that the spectra she obtained were "consistent" with Dr. Chen's proposed structure and Dr. Kingston's after the fact conclusion that the spectra obtained were "consistent" with Dr. Chen's proposed structure are not independent analysis or even knowledge independent of Dr. Chen because they each relied on Dr. Chen's proposed structure for purposes of their analysis. Frilette v. Kimberlin, *supra*. Further, Huang testified that she relied on more than simply the spectra (CR 664, line 3 through CR 667, line 3; and CR 674, lines 3-19). In other words, the spectra alone would have been insufficient to "prove" the structure of the sample compound. Dr. Kingston's reference to CX 57 as being "consistent" with the proposed structure also relies on the representations of Dr. Chen and therefore cannot be said to be

knowledge independent of the inventors. It also cannot be determined from Kingston's conclusion what formed the underlying basis for that conclusion. As we have stated previously, NMR spectra in general and these particular NMR spectra specifically are subject to more than one reasonable interpretation. Further, the date the "re-plot" was generated, May 13, 1993, is subsequent to Bouchard et al.'s effective filing date and, therefore, cannot establish prior invention by Chen et al.

BMS-183583

According to Dr. Chen's uncorroborated testimony, in December 1991, he prepared a sample from a 7-epi-taxol and DAST (**CX** 50). Dr. Chen also testified without corroboration that he prepared the starting material from epi-taxol as set forth in his laboratory notebook number 32242 at pages 184 and 194 (**CX** 51, 52). According to Dr. Chen, he performed an NMR analysis of "product 1°" in December 1991, although how Dr. Chen obtained "product 1°" is not set forth in the brief or exhibit (**CX** 53). Dr. Chen also requested MS analysis in December 1991, and the data was "re-plotted" in 1996 (**CX** 128, **CX** 302). According to Dr. Chen's uncorroborated testimony he de-protected the sample he had prepared according to the procedure set forth in his laboratory notebook 32242-195 in mid-December 1991 and recorded the procedure in his laboratory notebook number 32044 on page 009 of said notebook (**CX** 55). This notebook page suffers from the same problems with respect to witnessing as noted earlier.

According to Dr. Chen, he submitted a sample of the compound depicted in notebook 32044-009 to the Analytical Department and Ms. Huang recorded his request in her notebook (**CX** 98). The spectrum obtained by Ms. Huang bears her initials and is dated "12/16/91" yet the date on the printout is "13-5-93", that is, May 13, 1993 (**CX** 58). There are neither dates nor initialing for the handwritten structural formula written on the spectrum. Ms. Huang testified that the spectra she obtained were "consistent with" the structure "proposed by Dr. Chen." (**CR** 577-584; **CR** 642).

In January 1992, the Compound Control Department received Dr. Chen's request for testing and assigned the sample Bristol-Myers Squibb number **BMS-183583-01** (**CX** 59). The compound was determined to exhibit tubulin polymerization and stabilization properties and *in vitro* activity against certain cancer cells (**CX** 182, 183; **CX** 203). The results were forwarded to Dr. Chen who forwarded them to Dr. Farina. While this evidence may establish that a particular sample was tested the evidence does not establish what was the identity of the sample tested.

BMS-183821-01

According to Dr. Chen, he prepared a mixture of 2'-O-benzloxycarbonyl-7-deoxy-8-desmethyl-7,8-cyclopropataxol and its ring contracted analog as evidenced by the procedure set forth in his laboratory notebook 32044 at page 011 in mid-December 1991 (**CX** 61). According to Dr. Chen the procedures for preparing the

protected starting materials used to prepare the mixture of compounds in CX 61 are described in Dr. Chen's laboratory notebook number 32097 at pages 074 and 075 (CX 62 and CX 63, respectively). Dr. Chen subsequently submitted a sample along with a sample submission form to the Analytical Department and Ms. Huang performed the requested analysis in early January 1992 (CX 65; CX 107). According to Chen et al., the data collected by Ms. Huang was "re-plotted" in 1996 and the "re-plotted" NMR confirms that Dr. Chen had correctly identified the sample in 1991/1992.

Later in January 1992, the Analytical Department performed mass spectral analysis on the sample and the data obtained was "re-plotted" in 1996 (CX 109). According to Chen et al., the re-plotted spectra from the testing done in 1992 confirms that Dr. Chen correctly identified the sample he prepared in late 1991 (CX 64). In March 1992, Dr. Chen submitted additional samples of the product he prepared in December 1991 for high resolution mass spectroscopy (HRMS) (CX 118). Results from the data obtained in 1992 were reprinted in 1996 and that data allegedly confirms that Dr. Chen correctly identified the product he prepared in 1991.

In early January 1992, Dr. Chen alleges to have removed the protecting group from the sample he prepared in December. According to Dr. Chen's testimony, he recorded the procedure for deprotecting the earlier prepared compound in his laboratory notebook number 32044-039 (CX 67). Dr. Chen requested that the Analytical Department perform NMR and MS analysis on the sample. In early

January 1992, Ms. Huang recorded her analysis in her laboratory notebook number 30619 at page 036 (**CX** 108). According to the testimony of Huang and Rourick (**CR** 86; 197; **CX** 69; 108) the spectra were "re-plotted" in 1996 from the raw data obtained in 1992. Likewise, carbon NMR spectra obtained in 1992 were "re-plotted" in 1995 by Ms. D'Andrea (**CX** 69; 112). According to the testimony of Dr. Kingston, the "re-plotted" spectra were "consistent with" the structure proposed by Dr. Chen (**CR** 121).

In February 1992, the Analytical Department performed mass spectral analysis on the sample as prepared on page 039 of Dr. Chen's notebook number 32044 (**CR** 96; **CX** 117). In 1996, after Bouchard et al.'s effective filing date, the MS spectra were "re-plotted" and the results obtained were "consistent" with Dr. Chen's proposed structure for the sample. Later in March 1992, the Analytical Department performed HRMS analysis on the sample as prepared at page 039 of Dr. Chen's laboratory notebook number 32044 (**CR** 100; **CX** 121, 122). In early February 1992, Dr. Chen submitted a sample along with a compound submission form to the Compound Control Department to Dr. Fairchild for antitumor testing (9 milligrams) and to Dr. Mamber for antitumor testing (1.2 milligrams) (**CX** 70). Ms. Kissel assigned the sample Bristol compound number **BMS-183821-01** (**CX** 70). The results of Dr. Mamber's testing were included in Dr. Farina's summary in April 1992 (**CX** 72). In March 1992, the compound was tested for *in vitro* cancer

cell cytotoxicity (CX 204) and the results printed out by Dr. Fairchild (CX 206). After retesting, Dr. Fairchild concluded that the compound tested had the ability to kill human cancer cells *in vitro* (CR 144). The results were also included in Dr. Farina's April 1992 meeting summary.

According to Dr. Chen's uncorroborated testimony, he prepared additional samples of "compounds within the counts" in May 1992 74); December 1992 (CX 78)[12]; and January 1993 (CX 79). According to Dr. Chen's further uncorroborated testimony, Ms. Wei, at his direction prepared additional samples for testing in April 1992. Dr. Chen submitted a sample of the compound along with a submission form to the Compound Control Department (CX 86). The compound was assigned Bristol compound number BMS-183821-01 (lot number 002). In May/June 1992, *in vivo* experiments were started by injecting compound samples into cancer-implanted mice (CR 159; CX 241-243). According to Dr. Chen's uncorroborated testimony, he received the results of the *in vivo* testing by November 1992 (CR 78).

In February 1992, the Compound Control Department assigned the compound Bristol compound number BMS-183821 (CX 70). See, also, page 134, ¶403 of Chen et al.'s brief.

It is difficult to understand how Dr. Chen prepared "starting materials" for the procedure in his earlier numbered notebook based

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[12] As a "protected" analog of Taxol the compound described in CX 78 is not a compound within any count.

on entries in subsequently numbered notebooks, especially when the date of completion of the procedure in CX 61 is before the date of completion for the preparation of the starting materials as set forth in CX 62 and CX 63, that is, January 1, 1992. Further, we do not know the basis for Chen et al.'s conclusion or Dr. Chen's conclusion that the sample prepared in CX 61 was a "1:1" mixture of the protected cyclopropyl taxol derivative and "its ring contracted analog." There is certainly no evidence in the record showing who separated the compounds or how the compounds were separated or identified. We presume from the various arguments and submissions in the record that at least some of the analysis performed at Bristol-Myers Squibb was performed on a single compound and not a mixture of compounds. But compare this with Chen et al.'s representations in their petition to withdraw from issue their application serial number 07/907,261 wherein Chen et al. represented that:

> At the time of filing, Applicants believed that they possessed both the 7-α-fluorotaxol and 7-ß-fluorotaxol derivatives .... These 7-α-fluorotaxol and 7-ß-fluorotaxol derivatives formed a part of the claims. However, recent investigation has revealed that what was once believed to be the ß-fluorotaxol derivatives were actually cyclopropyltaxol derivatives ....

Thus, Chen et al. represented that they discovered that what was prepared was not a mixture of fluoro epimers of taxol but a mixture of a 7-α-fluoro taxol derivative and a 7,8-cyclopropyl taxol derivative.

In the compound submission form for BMS-183821-01 the amount

of sample submitted as completed by Dr. Chen is "10.2 mg" yet the amount of product obtained on Dr. Chen's notebook for 32044-39 is set forth as "9 mg of pdt was isolated 84.2% yield." It is not apparent to this Board how the additional sample was obtained.

We have no doubt from all the above-noted evidence that Dr. Chen was actively engaged in synthesizing derivatives of taxol in the critical time period. The problem with Chen et al.'s proofs, however, is one of identification of exactly what was prepared. Compounding this problem is the absence of adequate evidence establishing how Dr. Chen and the other researchers separated the compounds allegedly produced and subsequently tested the compounds for structural determination and utility. Certainly, thin layer chromatography (TLC), the procedure Dr. Chen represents to have used to perform a gross separation of "product" from the starting materials, does not permit the researcher to accumulate the sample which has been separated and recover and identify the same without the use of other analytical methods[13]. Rather, TLC is a useful tool

[13] We take official notice of the fact that TLC is a chromatographic technique useful for separating organic compounds which is useful in monitoring the progress of organic reactions and determining the purity of compounds. TLC consists of a stationary phase immobilized on a glass or plastic plate and an organic solvent. The sample is deposited as a spot on the stationary phase and the bottom of the plate placed in a container with solvent. When the solvent front travels the length of the plate and reaches the opposite edge of the stationary phase, the plate is removed and the spots, representing the starting materials and products, are developed with UV light or iodine vapor. The different components move up the plate at different rates due to differences in their partitioning behavior between the mobile solvent phase and the stationary phase. The retention factor, R_f, is defined as the

for indicating whether or not a reaction has occurred and whether or not the reaction is complete. Chen et al. have not even presented any of the actual TLC plates allegedly used by Dr. Chen to separate the compounds he allegedly prepared. Rather we have only Dr. Chen's rudimentary drawings of what purports to be the TLC plates he actually used to separate the compounds allegedly prepared.

Chen et al. also rely heavily on various nuclear magnetic resonance spectroscopy spectra as evidence that compounds allegedly prepared by Dr. Chen were identified by Dr. Chen or co-workers at Bristol-Myers Squibb as compounds within the various counts. Ignoring for the time being that Chen et al. have never identified any compound allegedly prepared by Dr. Chen or any other employee of Bristol-Myers Squibb by reading the compound allegedly prepared on the specific elements required by the various alternatives of the various counts, nuclear magnetic resonance spectroscopy (NMR) is understood to be an analytical tool capable of confirming the structure of an unknown compound. There is, however, no evidence in this record which establishes that NMR is capable of reliably identifying a complex compound such as one of the compounds of the

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distance traveled by the compound divided by the distance traveled by the solvent. Because the conditions which determine a compound's R_f are difficult to control, R_f factors are generally denominated "relative R_f's." Using an authentic sample of an unknown compound believed to have been prepared, the identity of an unknown can be confirmed by running the unknown and the authentic sample side-by-side. In re Ahlert, 424 F.2d 1088, 1091, 165 USPQ 418, 420 (CCPA 1970).

counts in a mixture of compounds based on the NMR spectrum alone. On this matter we find it to be quite informative to turn to the testimony of Dr. Nicolaou on NMR as an analytical tool. We shall reproduce parts of Dr. Nicolaou's testimony from BR 2-3:

> NMR is a well-known analytical technique used for at least the last 30 years for determining the structure of chemical compounds. The principle by which NMR functions involves the magnetic properties of certain atoms such as protons (^1H) contained within a molecule being evaluated. Protons can be compared to the needle of a compass. When a molecule being evaluated is placed in a strong magnetic field in an NMR instrument, the protons within that molecule orient themselves in equilibrium either in the same direction or in the opposite direction of the magnetic field. A proton oriented in one direction is at a certain energy level that differs from that of a proton oriented in the opposite direction.
>
> The protons are then exposed within the NMR instrument to a radio frequency excitation that can change their orientation. This excitation gives rise to a signal from each proton. After a Fourier transform treatment carried out by the NMR instrument, a spectrum showing all the signals is produced.
>
> In the spectrum, the signals corresponding to each proton experience a displacement generally to the left of an axis referenced at δ 0 ppm. This displacement (δ), commonly referred to as chemical shift value in ppm, is largely determined by the nature of the chemical group(s) to which the atom, in general a carbon, bearing the proton in question, is bonded. ...
>
> An NMR spectrum is sometimes referred to as the fingerprint of a compound. For any compound containing protons, the chemical shifts of the different protons are largely determined by the neighboring atoms and are considered as characteristic. Thus, NMR can be used to verify or disprove a proposed structure of a compound.

Thus, while NMR is capable of verifying a proposed structure, except for uncomplicated compounds such as benzene, for example, which has six equivalent protons (hydrogens) and presents a single, characteristic peak for its NMR spectrum, NMR spectra can be

complex because of the effects the various neighboring atoms and their substituents have on the protons attached to specific carbon atoms and are subject to interpretation. The testimony of Drs. Nicolaou and Parker and the testimony of Drs. Kingston (CR 1823, lines 15 through 24; CR 1825, lines 1 through 10), Kant (CR 2169) and Kadow (CR 40, 41) and the testimony of Ms. Huang (CR 664-665, 674) and others confirms that without other physical data characteristic of the unknown compound or without an NMR spectrum for a known sample of what the unknown compound is believed to be, NMR spectra are subject to interpretation and are not, necessarily definitive as to the structure of an unknown.

More significantly, the Chen et al. record does not include any definitive evidence which establishes exactly what material was subjected to NMR spectroscopy. Thus, we are left to conjecture whether or not pure compounds were tested or mixtures of compounds including starting materials and various products were tested. Identification and appreciation at the time of synthesis of what was tested is a substantial part of what Chen et al. were required to prove in order to be declared the first inventors of the subject matter of the counts.

We also have great difficulty in giving significant weight to the evidence presented by Chen et al. which represents "re-plotted" spectra obtained from data allegedly stored on magnetic tape at Bristol-Myers Squibb and "re-plotted" on dates subsequent to Bouchard et al.'s effective filing date. There has been no

testimony proffered by Chen et al. which establishes where the data tapes were kept, how they were stored, who had access to the tapes or even what information was actually saved on the tapes. Chen et al. have failed to provide any evidence which establishes who "re-plotted" the data stored or even how the "re-plots" were prepared. Thus, turning aside for the moment the fact that the "re-plots" were made at a time subsequent to Bouchard et al.'s effective filing date, we find the "re-plotted" spectra lack adequate reliability to afford them substantial weight. This fact is exacerbated by the fact that, in many instances, the original plot has not been proffered by Chen et al.

Thus, virtually all Chen et al.'s "evidence" of an actual reduction to practice relies on either Dr. Chen's uncorroborated testimony or Dr. Chen's uncorroborated notebooks. The procedures by which Dr. Chen had his samples "analyzed" is insufficient because what was "analyzed" is not adequately established by any of the evidence. Moreover, rather than analyze the samples Dr. Chen gave to the analytical group to determine without the benefit of any prior suggestion of what the compound tested actually was, the analytical group was merely running NMR analyses on the samples and reviewing the samples for evidence that Dr. Chen's proposed structure for the compounds was "consistent" with the NMR spectra. The original, contemporaneous in time analyses for most of Dr. Chen's samples he submitted prior to Bouchard et al.'s effective filing date establishes that the structures of the samples he

submitted were "consistent" with Dr. Chen's original belief that he had prepared mixed fluoro epimeric derivatives of taxol not cyclopropyl derivatives.

Accordingly, the evidence we have undertaken to review which would support the allegations made by Chen et al. in their brief, does not establish to this Board that it was more likely than not that Chen et al. prepared any compound within any of the counts before December 9, 1992, the effective filing date of Bouchard et al.'s involved application.

JUDGMENT

Having decided all the issues properly raised before us, it is now appropriate for us to render final judgment in this interference. Accordingly, pursuant to our authority under 37 C.F.R. § 1.658(a) and in view of our holding that Chen et al. failed to meet their burden of persuasion, we enter the following judgment.

Judgment as to the subject matter of Count 2 in this interference, is entered against Shu-Hui Chen and Vittorio Farina, the junior party. Shu-Hui Chen and Vittorio Farina, the junior party, are not entitled to their patent containing claims 7 through 9 of their U.S. patent 5,254,580 involved in this proceeding and designated as corresponding to Count 2.

Judgment as to the subject matter of Count 2 in this interference, is awarded to Hervé Bouchard, Jean-Dominque Bourzat and Alain Commerçon, the senior party. Hervé Bouchard, Jean-

Dominque Bourzat and Alain Commerçon, the senior party, are entitled to claim 142 of their involved patent application Serial Number 08/162,984 designated as corresponding to Count 2.

Judgment as to the subject matter of Count 3A in this interference, is entered against Shu-Hui Chen and Vittorio Farina, the junior party. Shu-Hui Chen and Vittorio Farina, the junior party, are not entitled to their patent containing claims 10 and 11 of their U.S. patent 5,254,580 involved in this proceeding and designated as corresponding to Count 3A.

Judgment as to the subject matter of Count 3A in this interference, is awarded to Hervé Bouchard, Jean-Dominque Bourzat and Alain Commerçon, the senior party. Hervé Bouchard, Jean-Dominque Bourzat and Alain Commerçon, the senior party, are entitled to claim 141 of their involved patent application Serial Number 08/162,984 designated as corresponding to Count 3A.

Judgment as to the subject matter of Count 4 in this interference, is entered against Shu-Hui Chen and Vittorio Farina, the junior party. Shu-Hui Chen and Vittorio Farina, the junior party, are not entitled to their patent containing claims 1 through 6, 8 and 9 of their U.S. patent 5,254,580 involved in this proceeding and designated as corresponding to Count 4.

Judgment as to the subject matter of Count 4 in this interference, is awarded to Hervé Bouchard, Jean-Dominque Bourzat and Alain Commerçon, the senior party. Hervé Bouchard, Jean-Dominque Bourzat and Alain Commerçon, the senior party, are

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U.S. DEPARTMENT OF COMMERCE
Patent and Trademark Office

INTERFERENCE DIGEST

Interference No. 103,675 Paper No. 28

Name, Herve Bouchard et al.

Serial No. 08/162,984 Patent No. _____

Title, NEW TAXOIDS, THEIR PREPARATION AND PHARMACEUTICAL COMPOSITION CONTAINING THEM

Filed, 12/08/93

Interference with Chen

DECISION ON MOTIONS

Examiner-in-Chief, _____ Dated, _____

FINAL DECISION

Board of Patent Appeals and Interferences, favorable Dated, 8/2/02

Court, _____ Dated, _____

REMARKS

This should be placed in each application or patent involved in interference in addition to the interference letters.

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